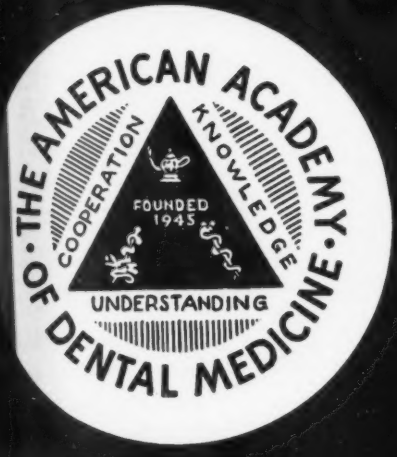
Volume 16 No. 3
July • 1961

UNIVERSITY OF MICHIGAN
DENTISTRY LIBRARY



ARTICULOS SUMMARISATE
IN INTERLINGUA

journal of dental medicine

OBJECTIVES OF THE AMERICAN ACADEMY OF DENTAL MEDICINE

(Quoted from the Constitution)

"To promote the study and dissemination of knowledge of the cause, prevention and control of diseases of the teeth, their supporting structures and adnexa and related subjects; and to foster and promote a better scientific understanding between the fields of dentistry and medicine."

IN THIS ISSUE

DR. IRVING YUDKOFF, JOURNAL EDITOR, RETIRES 123

THE RELATIONSHIP OF THREE-HOUR BLOOD GLUCOSE TO ORAL SIGNS (DENTAL FINDINGS). P. Moller and E. Cheraskin 124

CHANGING CONCEPTS IN PERIODONTAL PROGNOSIS. Allan N. Arvins 133

PSYCHOTHERAPEUTIC AGENTS. Milton J. Schiffrin 141

FOCAL INFECTION. D. Birkhahn 147

MEDICAL VIEWS ON ORAL PROBLEMS 152

BOOK REVIEWS 155

ACADEMY PROCEEDINGS 157

ANNOUNCEMENTS 163

JOURNAL OF DENTAL MEDICINE

VOL. 16 JULY, 1961 NO. 3

Editor
ALEXANDER SOBERMAN, A.B., D.D.S.
123 East 37th Street, New York 16, N. Y.

Consultant Editors
ALLAN N. ARVINS, D.D.S., F.A.C.D., F.A.D.M.
IRVING YUDKOFF, B.A., D.D.S., F.A.D.M.

Associate Editors
J. LEWIS BLASS, Ph.G., D.D.S., F.A.C.D., F.A.D.M.
MARVIN N. OKUN, D.D.S.
S. LEONARD ROSENTHAL, D.D.S., F.A.C.D., F.A.D.M.

Assistant Editors
SANFORD C. FRUMKER, D.D.S.
HENRY I. GREENE, D.D.S.
NATHAN WACHTEL, D.D.S.
GEORGE J. WHINSTON, D.D.S.
GEORGE J. WITKIN, D.D.S., F.A.C.D., F.A.D.M.
ARTHUR N. YOHAI, D.D.S.

Business Manager
Advertising Manager
REUBEN FELTMAN, D.D.S.
211 Main Ave, Passaic, N. J.

Publications Committee
ALEXANDER SOBERMAN, A.B., D.D.S., *Chairman*
ALLAN N. ARVINS, D.D.S., F.A.C.D., F.A.D.M. (1961)
J. LEWIS BLASS, Ph.G., D.D.S., F.A.C.D., F.A.D.M. (1962)
LESTER W. BURKET, M.D., D.D.S., F.A.C.D., F.A.D.M. (1962)
EDWARD G. FREIMUTH, D.D.S., (1962)
DON C. LYONS, D.D.S., F.A.C.D., F.A.D.M. (1963)
S. LEONARD ROSENTHAL, D.D.S., F.A.C.D., F.A.D.M. (1963)
BERNARD B. SATUREN, D.D.S. (1961)
SIDNEY SORRIN, D.D.S., F.A.C.D., F.A.D.M. (1963)
GEORGE J. WITKIN, D.D.S., F.A.C.D., F.A.D.M. (1961)

* * *

The Journal of Dental Medicine is the official publication of the American Academy of Dental Medicine. It is published quarterly, in January, April, July, and October at New York, N. Y. Publication in the Journal of Dental Medicine is not an endorsement by the American Academy of Dental Medicine of opinions in any article, abstract or extract. The Editor and Publisher are not responsible for opinions expressed by authors of contributions.

Subscription rate: $6.00 Annually, $6.50 Foreign. Single copies, $1.50. Special Nutrition Issue (Sept. 1953) $1.00 per copy, special rate in quantity. Tenth Anniversary Issue (April 1956) $1.00 per copy, $5.00 for bound volume. Special student subscription rate, $4.00 annually.

Copyright 1961 by the American Academy of Dental Medicine, Inc.

Preparations of Scientific Manuscripts

1. Manuscripts should be typed, double spaced, on one side of 8½ by 11 inch bond paper, allowing one inch margins.

2. The title should appear at the top of the first page, followed by the name and degrees of the author or authors. The address of the author should appear at the end of the article.

3. The name of the group before which the paper was presented, the date and place of delivery and the author's university, hospital or government affiliation, if any, should appear at the bottom of the title page.

4. Manuscripts presented for publication should: a—present new facts, describe new techniques or methods of practice or reevaluate established principles; b—contain the results of original research, or c—provide a review of facts concerning a particular subject so that the reader may deduce therefrom legitimate, important conclusions.

5. Data presented in charts and tables should be discussed but not repeated in the text.

6. A concise summary and a precise conclusion add to the value of a scientific article. The summary should state briefly the purpose of the article and the main facts presented or reviewed.

7. Bibliographic references should be in numerical sequence and correspond to the numbers placed in the text where they are mentioned.

8. An article that has been published previously under the same or a different title, or one that contains extensive excerpts from a previously published paper or book, should not be submitted for publication.

Foreign Correspondents

Argentina: Dr. Roberto Lado, Buenos Aires.
Australia: Dr. H. Rich, Sidney.
Burma: Dr. Wu Moon-Aung, Rangoon.
Brazil: Dr. Jacob Reifman, Rio de Janeiro.
Canada: Dr. Mooney Averback, Winnipeg.
Dr. Bruce Squires, Ottawa.
Columbia: Dr. Carlos de Castro, Bogota.
Cuba: Dr. Claudio Funcia Cornell, Havana.
Dominican Republic: Dr. Fernando Camino Cestero, Trujillo City.
Great Britain: Dr. A. Bryan Wade, London.
Greece: Dr. Or. A. Louridis, Athens.
Haiti: Dr. Gerald Roumain, Port-au-Prince.
India: Dr. Om Gupta, New Delhi.
Iran: Dr. Ismail Yazdi, Tehran.
Italy: Dr. Guiseppe Ceria, Turin.
Mexico: Dr. Fermin Reygadas, Mexico City.
Peru: Dr. Rolando Bernui, La Oroya.
Puerto Rico: Dr. Carlos Sosa, Santurce.
Spain: Dr. I. Saenz de la Calzada, Madrid.
Venezuela: Dr. L. J. Mota Potentini, Caracas.

DIRECTORY OF OFFICERS

OFFICERS — 1960-61

President	Abraham Goldstein, 334 East 3rd St., Brooklyn, N. Y.
President-Elect	Gunter Schmidt, 225 South Meramec, Clayton, Missouri
Vice-President	Walter I. Levine, 809 Cathedral Street, Baltimore, Maryland
Secretary	George F. Clarke, 554 Franklin St., Melrose, Mass.
Treasurer	William M. Greenhut, 124 East 84th Street, New York 28. N. Y.
Editor	Alexander Soberman, 123 East 37th Street, New York, N. Y.

CHAIRMEN OF CONSTITUTIONAL COMMITTEES (Standing)

Constitution	Levine, Walter I., 809 Cathedral Street, Balitmore, Maryland
Membership	Conat, Charles M., 672 Fisher Bldg., Detroit, Michigan
Dento-Medical Relations	Entine, Martin, 3037 N. Broad St., Philadelphia, Pennsylvania
Publications	Soberman, Alexander, 123 East 37th Street, New York, N. Y.
Sections	Turkenkopf, Samuel, 47 Lincoln Park, Newark, New Jersey
Scientific Sesssions:	
National Chairman 1960-61	Lyons, Don C., 420 West Michigan Avenue, Jackson, Michigan
General Chairman 1960-61	Ward, Howard, 15 Bond Street, Great Neck, New York
Mid-Annual Meeting Chairman—1960	Nachbar, Stephen, 30 Central Park So., New York, New York
Fellowship and Honor. Mem.	Schmidt, Gunter, 225 South Meramec, Clayton, Missouri
Nominating	Becks, Hermann, U.C. Medical Center, San Francisco, California
Ethics	Gelhaar, Harold R., 286 Park St., Montclair, New Jersey
Education	Saturen, Bernard B., 1930 Chestnut St., Phila., Pennsylvania
Planning	Becks, Hermann, U.C. Medical Center, San Francisco, California
Graduate Awards	Ward, Howard, 15 Bond Street, Great Neck, N. Y.
Memorial Fund (S. C. Miller)	Blass, J. Lewis, 4 E. 41st Street, New York, New York

CHAIRMEN OF SPECIAL COMMITTEES (Appointed)

Historian	Greenhut, William M., 124 E. 84th St., New York, New York
Membership Retention	Freedland, Jack, 724 Doctors Bldg., Charlotte, No. Carolina
Keys	Chasens, Abraham, 203 W. 9th Street, Plainfield, New Jersey
Insurance	Greenhut, William M., 124 E. 84th St., New York, New York
Int'l Interchange of Dent. Med.	Rosenthal, S. L., 2200 Benj. Franklin Pkwy., Phila., Pennsylvania
Members Outside North America	Ross, Justin, 515 Madison Ave., New York, New York
Residency in Dental Med.	Hyman, Milton, 2 E. 54th Street, New York, New York
Dent. Infor. Bur.	Pomeranz, Melvin, 57 W. 57th Street, New York, New York
Alternate, D.I.B.	Puccio, Joseph, 98 Murray Avenue, Port Washington, New York
Parliamentarian	Barkley, Joseph, 16101 E. Warren Ave., Detroit, Michigan
Advertising	Feltman, Reuben, 211 Main Avenue, Passaic, New Jersey

DELEGATES FROM SECTIONS**

Connecticut	Lester B. Weiss, New Haven, Conn.
Maryland	Irving Abramson, Baltimore, Md.
Massachusetts	Earl Stone, Boston, Mass.
Montreal	Lou Rosen, Montreal, Canada.
New Jersey	Reuben Feltman, Passaic, N. J.
New York	Howard L. Ward, Great Neck, N. Y.
Philadelphia	Jacoby T. Rothner, Philadelphia, Pa.
Michigan	Edward Freimuth, Detroit, Mich.
Ohio	Samuel Robbins, Cleveland, Ohio.
Texas	Edward T. Farris, Austin, Texas.
North Carolina	J. B. Freedland, Charlotte, N. C.
Missouri	Gunter Schmidt, St. Louis, Mo.

** Notify Editor and Secretary of any changes.

PAST PRESIDENTS

‡Samuel Charles Miller, New York, N. Y.
Sidney Sorrin, New York, N. Y.
J. Lewis Blass, New York, N. Y.
George A. Bruns, Boston, Mass.
Louis R. Burman, Bronx, N. Y.
‡Gordon R. Winter, Philadelphia, Pa.
Harold R. Gelhaar, Upper Montclair, N. J.
‡Alvin H. Berman, Baltimore, Md.
George F. Clarke, Boston, Mass.
S. Leonard Rosenthal, Philadelphia, Pa.
William M. Greenhut, New York, N. Y.
Marcel B. Archambault, Montreal, Canada.
D. Chalmers Lyons, Jackson, Mich.
George G. Stewart, Philadelphia, Pa.
Hermann Becks, San Francisco, Calif.

‡ Deceased.

DR. IRVING YUDKOFF, JOURNAL EDITOR, RETIRES
DR. ALEXANDER SOBERMAN ELECTED SUCCESSOR

Dr. Irving Yudkoff
Editor, 1953-1961

After eight years as editor of the Journal of Dental Medicine, Dr. Irving Yudkoff has retired from that post. The pressures of his private practice, teaching and lecturing schedules, and hospital responsibilities, have necessitated this decision. He leaves the editorial reins in the very capable hands of Dr. Alexander Soberman who will assume these duties as of July 1, 1961.

During his tenure of office as editor, the Journal has increased in size and scope to the position of prominence it now holds among dental periodicals. Throughout his editorship, Dr. Yudkoff emphasized the circulation of the Journal among non-English speaking peoples. In 1954, summaries of all articles in the Journal were initiated in Interlingua. The response among those countries whose populations spoke romance languages was immediate. The South American circulation of the Journal increased many fold, while new interest became quite evident in Europe. Over the years, Dr. Yudkoff made it a practice of sending complimentary copies of the Journal to key dental personnel in Australia and many Asian countries. This resulted in subscriptions from book publishers and dental and medical colleges in these foreign areas. The Journal can now proudly boast of subscribers on all six continents.

In 1956 the largest Journal of Dental Medicine was published. This was the 10th Anniversary Issue which contained 108 pages of scientific articles, and a history of the ten years of the Academy.

The Academy extends its best wishes and thanks to Dr. Yudkoff for his eight years of faithful and pioneering service as editor. During these years, quietly, sincerely and with intelligent determination he performed the demanding duties of his office.

Our excellent journal has been a showpiece for the Academy and has been responsible for recruiting members throughout the world. We are confident that the high journalistic standards attained by our Journal will continue under the guidance of our new editor, Dr. Alexander Soberman.

THE RELATIONSHIP OF THREE-HOUR BLOOD GLUCOSE TO ORAL SIGNS (DENTAL FINDINGS)*

P. MOLLER, D.M.D.** and E. CHERASKIN, M.D., D.M.D.***

INTRODUCTION

The implication is present in the literature that clinical tooth mobility and tooth loss are common findings in the diabetic patient. Further implied is that the relationship is linear. In other words, the more pronounced the diabetic state (the higher the blood glucose), the more severe the tooth mobility, the greater the incidence of tooth loss.

Two reports have already been released in which the relationship of these two dental signs (clinical tooth mobility and tooth loss) to the *fasting*[1] and *two-hour*[2] blood true glucose in a group of 100 routine dental patients has been analyzed. A comparison of these two previously reported studies has shown that the relationship between these oral signs and the *fasting* true glucose is more significant than the relationship between these same two signs and the *two-hour* blood glucose.

This report will consider the relationship of these same two dental signs to the *three-hour* blood true glucose as determined during the glucose tolerance testing of 100 routine dental patients. The purpose of this report is to determine whether the relationship between the *three-hour* glucose and these oral signs is more or less significant than the findings obtained at the *fasting* and *two-hour* levels.

REVIEW OF THE LITERATURE

Published material is available regarding the relationship between diabetes mellitus and: (1) *clinical tooth mobility*, and (2) *tooth loss*.

CLINICAL TOOTH MOBILITY

Frequent mention is made of this complaint in the literature[3-7]. However, none of these reports attempts to quantitate tooth mobility with carbohydrate imbalance. Sheridan et al[8] observed clinical tooth mobility in 75 percent of their dental patients with diabetes mellitus. In contrast, 38 percent of their nondiabetic group were found to have clinical tooth mobility. Cheraskin and Moller[9] have demonstrated significant relationships between the glucose tolerance pattern and clinical tooth mobility. Specifically, the fasting, one-, two-, and three-hour true glucose levels were higher in those patients with clinical tooth mobility compared with those without tooth mobility.

TOOTH LOSS

Lovestedt and Austin[10] reported a greater incidence of tooth loss in diabetic patients than in their observed nondiabetic population. Barach[11] also observed a greater tooth loss pattern among 200 diabetic patients in contrast with an examination of the total number of teeth in various age groups among 12,000 presumably healthy individuals. Sheridan et al[8], in their study of 100 routine dental patients, found a mean of 18.19 teeth in diabetic patients with a standard deviation of 9.70 contrasted with 21.21 teeth in presumably healthy persons with a standard deviation of 8.32. In other words, the concensus is that tooth loss is associated with the diabetic state.

METHOD OF INVESTIGATION

One hundred dental patients were studied in the Section on Oral Medicine at the University of Alabama School of Dentistry. As far as possible, the subjects were selected at random. Table 1 shows the age distribution of the group. It can be observed that the pattern ap-

* This investigation was supported in part by a traineeship grant (2G-15) from the Epidemiology and Biometry Section, Public Health Service and U. S. Army Contract No. DA-49-193-MD-2059.

** Fellow in Oral Medicine, University of Alabama School of Dentistry, Birmingham, Alabama.

*** Professor and Chairman, Section on Oral Medicine, University of Alabama School of Dentistry, Birmingham, Alabama.

TABLE 1 — AGE DISTRIBUTION

Age Group	*Total Number of Patients*
0- 9	1
10-19	9
20-29	19
30-39	27
40-49	19
50-59	17
60-69	8
Total	100

proaches a typical unimodal curve. Included in this study were 22 males and 78 females.

Each subject was carefully examined regarding possible clinical tooth mobility. The scoring was made on the basis of a four-point scale. If no tooth mobility was demonstrated, zero was assigned. When the teeth showed mobility less than 1 mm., then one was recorded. Two was utilized to indicate tooth mobility greater than 1 mm. Edentulous subjects were assigned a score of three. Patients without any teeth were included in the clinical tooth mobility analysis, considering total absence of teeth as the extreme in tooth mobility. An analysis was also made of clinical tooth mobility excluding edentulous subjects, and no significant difference was observed between the results obtained from these two scoring systems. Therefore, in the interest of space conservation, in this study only the analysis including the edentulous subjects will be reported. Also, the number of teeth clinically evident was counted. For this report, a scoring based on the four-point scale was designed. If 25 to 32 teeth were clinically evident, zero was assigned. When the number of teeth was 20 to 25, then one was recorded. Two was utilized to indicate that 10 to 19 teeth were observed. Three was assigned for edentulous subjects. Realizing the crudeness of this scoring system, an analysis, based on the actual number of teeth lost, was also made. Again no significant difference was observed between the results obtained from these two scoring systems. Therefore, in the interest of simplifying the computations in this report, the scoring system based on the four-point scale was employed.

A true glucose tolerance test was performed on each patient according to the methods of Somogyi[12, 13] and Nelson[14]. No preparatory diet was recommended except for complete fasting for twelve hours prior to the laboratory examination. Complete details regarding the method of investigation are available in the publication by Sheridan et al[8]. For this study, only the information derived from the *three-hour* blood glucose measurements was utilized.

RESULTS

The three-hour blood glucose determinations will be considered in the light of: (1) *single findings*, and (2) *combination of single findings*.

SINGLE SIGNS

An analysis of the data will be offered for: (1) *clinical tooth mobility*, and (2) *tooth loss*.

Clinical Tooth Mobility: This particular sign will be discussed in terms of: (1) *mean scores*, (2) *coefficients of variation*, and (3) *statistical significance*.

Mean Scores: It appears from Figure 1 that the relationship between three-hour blood glucose and clinical tooth mobility is parabolic. In other words, tooth mobility is least with three-hour blood glucose levels in the 70-79 mg. percent range. As the three-hour blood glucose

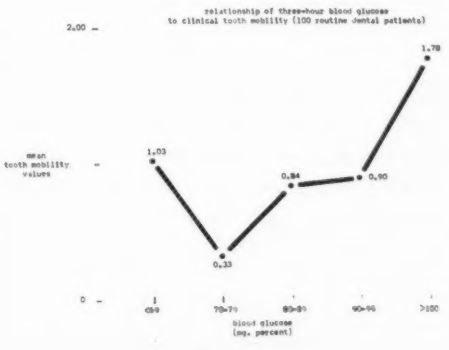


Figure 1

decreases and increases, clinical tooth mobility also increases.

Coefficients of Variation: Table 2 shows that the smallest coefficients of variation are generally at the extremes. In other words, the individual findings tend to cluster about the mean in those cases with extremes of hypo- and hyperglycemia.

Statistical Significance: It is clear from Table 2 that there are statistically significant differences between the three-hour blood glucose levels in the <69 mg. percent group and the 70-79 mg. percent group ($P < .005$). Statistically significant differences were also observed in comparison of the 90-99 mg. percent group with the >100 mg. percent blood glucose group ($P < .025$).

Tooth Loss: This particular dental sign will be discussed in terms of: (1) *mean scores,* (2) *coefficients of variation,* and (3) *statistical significance.*

Mean Scores: It appears from Figure 2 that the relationship between three-hour blood glucose and the incidence of tooth loss is parabolic. In other words, the lowest mean score was observed in the three-hour blood glucose levels in the 70-79 mg. percent range. As the three-hour blood glucose decreases and increases, the incidence of tooth loss also increases.

Coefficients of Variation: Table 3 shows the range of coefficients of variation for the various three-hour blood glucose groups. The greatest coefficient of variation occurred in the 70-79 mg. percent group. It can also be observed that the least coefficient of variation is present in the group with three-hour blood glucose greater than 100 mg. percent.

Statistical Signficance: Table 3 also shows no statistically significant difference between any of the three-hour blood glucose groups. However, a comparison of alternate groups (e.g., 70-79 versus >100), discloses a $P < .001$.

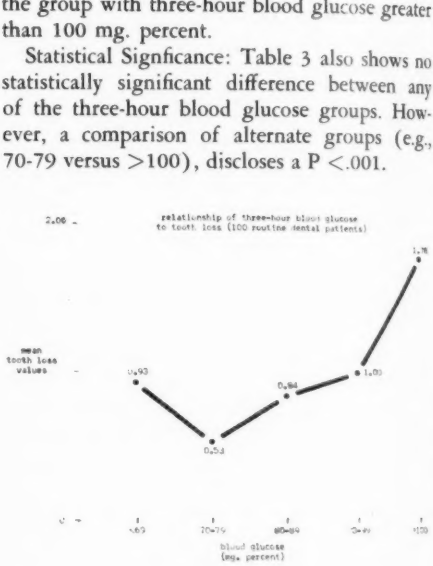


Figure 2

TABLE 2

RELATIONSHIP OF THREE-HOUR BLOOD GLUCOSE TO CLINICAL TOOTH MOBILITY

	Blood Glucose Groups (mg. percent)				
	<69	70-79	80-89	90-90	>100
Mean scores	1.03	.33	.84	.90	1.78
Standard deviation	1.097	.488	1.118	.831	.892
Coefficient of variation	106.50	147.88	133.10	92.33	50.11
Mean difference	.70	.51	.06	.88	
Standard error of difference	.214	.286	.358	.345	
Observed t value	3.2710	1.7832	.1675	2.5507	
Degrees of freedom	53	32	28	23	
P	*<.005*	>.100	.500	*<.025*	

TABLE 3—RELATIONSHIP OF THREE-HOUR BLOOD GLUCOSE TO TOOTH LOSS

	Blood Glucose Groups (mg. percent)				
	<69	70-79	80-89	90-99	>100
Mean scores	.93	.53	.84	1.00	1.78
Standard deviation	1.141	.834	1.068	.894	.893
Coefficient of variation	122.69	157.36	127.14	89.40	50.17
Mean difference	.40	.31	.16	.78	
Standard error of difference	.281	.327	.363	.359	
Observed t value	1.4234	.9480	.4407	2.1727	
Degrees of freedom	53	32	28	23	
P	>.100	>.200	.500	>.050	

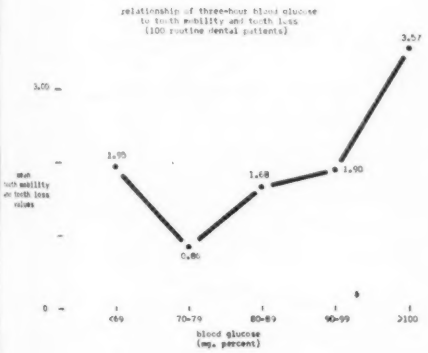


Figure 3

COMBINATION OF SINGLE FINDINGS

An analysis of the data will be offered for clinical tooth mobility and tooth loss.

Clinical Tooth Mobility and Tooth Loss: The combination of these two dental signs will be discussed in terms of: (1) *mean scores,* (2) *coefficients of variation,* and (3) *statistical significance.*

Mean Scores: It appears from Figure 3 that the relationship between three-hour blood glucose and the presence of these two dental signs is parabolic. In other words, clinical tooth mobility and tooth loss are least with three-hour blood glucose in the 70-79 mg. percent range. As the three-hour blood glucose decreases or increases, the combination of clinical tooth mobility and tooth loss also increases.

Coefficients of Variation: Table 4 shows that the least coefficient of variation was observed in the >100 mg. percent blood group. In other words, the individual scores cluster more closely about the means as one approaches hyperglycemia.

Statistical Significance: An examination of Table 4 discloses that there are statistically significant differences between the three-hour blood glucose levels. It can be observed that there are statistically significant values obtained when comparing the mean differences of the <69 versus 70-79 ($P < .025$) and 90-99 versus >100 mg. percent blood glucose levels ($P < .010$).

DISCUSSION

The data will be discussed in the following fashion: (1) *mean scores,* (2) *coefficients of variation,* and (3) *probability values.* Because of the close correlation between age versus glucose levels and oral signs and age, the age factor will be analyzed in terms of three-hour blood glucose and oral signs.

MEAN SCORES

An analysis of the mean score values for the

TABLE 4—RELATIONSHIP OF THREE-HOUR BLOOD GLUCOSE TO TOOTH MOBILITY AND TOOTH LOSS

	Blood Glucose Groups (mg. percent)				
	<69	70-79	80-89	90-99	>100
Mean scores	1.95	.86	1.68	1.90	3.57
Standard deviation	2.063	1.125	1.945	1.300	1.453
Coefficient of variation	105.79	130.81	115.77	68.42	40.70
Mean difference	1.09	.82	.22	1.67	
Standard error of difference	.437	.533	.594	.552	
Observed t value	2.4942	1.5384	3703	3.0253	
Degrees of freedom	53	32	28	23	
P	<.025	>.100	.500	<.010	

two dental signs and their combination points up the fact that the patterns are parabolic. Moreover, it appears that the parabolic pattern is more clearcut with the combination of dental signs than it is when single signs are analyzed. These data also indicate that there is a range of three-hour blood glucose normality for a particular dental sign or group of signs (Table 5) in the general range of 70-79 mg. percent. These data also suggest that blood glucose levels above and below this narrow range are apt to be related to a higher incidence of the two oral signs.

It is interesting to compare the findings observed in this report with three-hour blood glucose with the observations already described with respect to fasting blood glucose levels[1] and two-hour blood glucose levels[2] and dental signs.

In the main, the parabolas shown with three-hour blood glucose levels were also observed with the fasting and two-hour determinations as previously recorded. However, the parabolas on a mean basis seem, in general, more distinct at the three-hour time than previously observed fasting and at the two-hour level.

COEFFICIENTS OF VARIATION

Generally speaking, the lower the coefficient of variation, the more individual scores cluster about the mean. Thus a coefficient of variation of zero is the ultimate in that it signifies that all subjects provide scores exactly like the mean.

Table 6 summarizes the coefficients of varia-

TABLE 5—COMPARISON OF MEAN SCORES

	Blood Glucose Groups (mg. percent)				
	<69	70-79	80-89	90-99	>100
Clinical tooth mobility	1.03	.33	.84	.90	1.78
Tooth loss	.93	.53	.84	1.00	1.78
Clinical tooth mobility and tooth loss	1.95	.86	1.68	1.90	3.57

TABLE 6—COMPARISON OF COEFFICIENTS OF VARIATION

	Blood Glucose Groups (mg. percent)				
	<69	70-79	80-89	90-99	>100
Clinical tooth mobility	106.50	147.88	133.10	92.33	50.11
Tooth loss	122.69	157.36	127.14	89.40	50.17
Clinical tooth mobility and tooth loss	105.79	130.81	115.77	68.42	40.70

tion with respect to the three-hour blood glucose and the single and combination analyses of oral signs. It is of interest to observe that there is a tendency for the coefficients of variation to be smaller at the higher blood glucose levels. Further, the coefficients of variation are smaller, at all blood glucose levels, for the combination of the dental signs. This can be interpreted to mean that the individual scores more closely cluster about the mean in the case of hyperglycemia. Moreover, the smaller coefficients of variation at this extreme level are much more clearcut with respect to three-hour blood glucose and oral sign analysis than observed previously in connection with fasting[1] and two-hour[2] blood glucose studies.

PROBABILITY FACTORS

Table 7 summarizes the P values for the various groups in terms of single and combination of dental signs with respect to three-hour blood glucose determinations. It is clear from this chart that statistically significant mean differences were disclosed in the analyses of clinical tooth mobility and the combination of the two dental signs. Further, a study of Table 7 and similar ones in earlier reports for fasting[1] and two-hour blood glucose[2] brings to light a greater tendency for statistical significance for the three-hour scores.

AGE FACTOR

There are some investigators who contend that, with increasing age, the normal blood glucose values increase. Certainly the data from which this study is derived indicate that oral signs, in the main, occur predominantly in the older age groups[8]. Hence, it was thought necessary to analyze the relationship between oral signs and blood glucose levels in a single age group.

Figure 4 pictorially represents the relationship of three-hour blood glucose to clinical tooth mobility in the 19 patients between the ages of 40-49. An examination of Figure 4 and a comparison of these data and the findings in Figure 1 indicates that the parabolic pattern is greatly exaggerated when the age factor is eliminated. No statistically significant differences were observed in this analysis (Table 8).

TABLE 7—COMPARISON OF PROBABILITY VALUES

	Blood Glucose Groups (mg. percent)				
	<69	70-79	80-89	90-99	>100
Clinical tooth mobility	<.005	>.100	.500	<.025	
Tooth loss	>.100	>.200	.500	>.050	
Clinical tooth mobility and tooth loss	*<.025*	>.100	.500	*<.010*	

TABLE 8—RELATIONSHIP OF THREE-HOUR BLOOD GLUCOSE TO CLINICAL TOOTH MOBILITY (19 PATIENTS BETWEEN 40 TO 49 YEARS OLD)

	Blood Glucose Groups (mg. percent)				
	<69	70-79	80-89	90-99	>100
Mean scores	1.67	.67	.50	1.33	2.00
Standard deviation	1.032	.578	1.00	.578	1.00
Coefficient of variation	61.80	86.27	200.00	43.46	50.00
Mean difference	1.00	.17	.83	.67	
Standard error of difference	.538	.602	.602	.669	
Observed t value	1.8587	.2823	1.3787	1.0014	
Degrees of freedom	7	5	5	4	
P	>.100	.500	>.200	>.200	

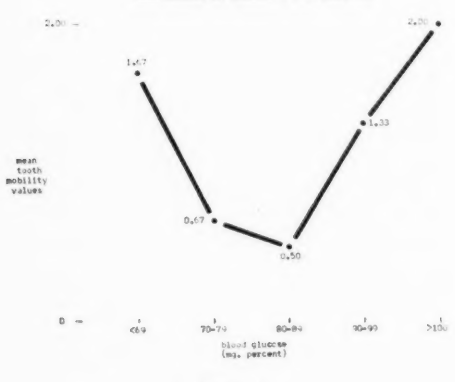


Figure 4

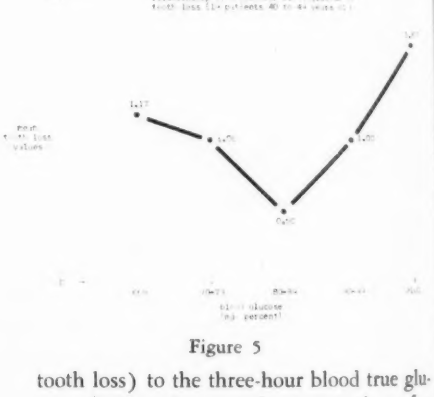


Figure 5

Figure 5 is an analysis of the relationship of the three-hour blood glucose to tooth loss in 19 patients between the ages of 40 and 49. An examination of Figure 5 demonstrates that the parabolic pattern which has been observed previously still prevails. No statistically significant differences could be detected in this analysis (Table 9).

SUMMARY

1. This report analyzes the relationship of two dental signs (clinical tooth mobility and tooth loss) to the three-hour blood true glucose during glucose tolerance testing of a group of 100 routine dental patients.
2. The analysis of the mean score values for the two signs independently and in their combination points up the fact that the patterns are always parabolic.
3. A study of the coefficients of variation for all of the blood glucose groups demonstrates that they are generally lower at the higher levels. Moreover, this relationship is more clearcut with respect to *three-hour* blood glucose analysis than in the case of the *fasting*[1] or *two-hour*[2] blood glucose studies.

TABLE 9—RELATIONSHIP OF THREE-HOUR BLOOD GLUCOSE TO TOOTH LOSS (19 PATIENTS BETWEEN 40 TO 49 YEARS OLD)

	Blood Glucose Groups (mg. percent)				
	<69	70-79	80-89	90-99	>100
Mean scores	1.17	1.00	.50	1.00	1.67
Standard deviation	1.329	1.000	1.000	1.000	1.155
Coefficient of variation	113.59	100.00	200.00	100.00	69.16
Mean difference	.17	.50	.50	.67	
Standard error of difference	.792	.766	.766	.836	
Observed t value	.2146	.6527	.6527	.8014	
Degrees of freedom	7	5	5	4	
P	.500	.500	.500	>.400	

4. A study of the probability values indicates that statistically significant mean differences were disclosed in the analyses of clinical tooth mobility and in the combination of the two dental signs. In this regard, it appears that the probability values for the *three-hour* blood glucose comparisons are much more significant than previously observed with *fasting*[1] and *two-hour*[2] comparisons.
5. The findings suggest that the very same oral signs (clinical tooth mobility and tooth loss) are associated with both hyper- and hypoglycemia.
6. The evidence derived from this study suggests that the relationships which have been analyzed are not associated significantly with the age factor.
7. These data suggest that the relationship of three-hour blood glucose normality may be more narrow than usually accepted.

BIBLIOGRAPHY

1. Moller, P. and Cheraskin, E. The relationship of fasting blood glucose to oral signs (dental findings). Odont. Revy 11: #3, 255-270, 1960.
2. Moller, P. and Cheraskin, E. The relationship of two-hour blood glucose to oral signs (dental findings). New York Jour. Den. 31: #1, 5-14, January 1961.
3. Rudy, A. and Cohen, M. M. The oral aspects of diabetes mellitus. New England Jour. Med. 219: #14, 503-508, October 6, 1938.
4. Rudy, A. and Cohen, M. M. Oral aspects of diabetes mellitus. J. A. D. A. 29: #4, 523-534, April 1942.
5. Kaplan, N. Oral symptomatology of diabetes mellitus. Penn. Dent. Jour. 41: #1, 50-51, 60-61, November 1938.
6. Rutledge, C. E. Oral and roentgenographic aspects of the teeth and jaws of juvenile diabetics. J.A.D.A. 27: #11, 1740-1750, November 1940.
7. Martinez, E. Diabetes in dental practice. Dent. Abst. 1: #3, 178, March 1956.
8. Sheridan, R. C., Jr., Cheraskin, E., Flynn, F. H. and Hutto, A. C. Epidemiology of diabetes mellitus: II. A study of 100 dental patients. Jour. Periodont. 30: #4, 298-323, October 1959.
9. Cheraskin, E. and Moller, P. The normal glucose tolerance pattern: The develoment of blood glucose normality by an analysis of oral signs (dental findings). Jour. West. Soc. Perodont. 8: #3, 81-94, September 1960.
10. Lovestedt, S. A. and Austin, L. T. Periodontoclasia in diabetes mellitus. J. A. D. A. 30: #3, 273-275, February 1943.
11. Barach, J. H. Diabetes and its treatment. 1949. New York, Oxford University Press, p. 54.
12. Somogyi, M. A new reagent for the determination of sugars. Jour. Biol. Chem. 160: #1, 61-68, September 1945.
13. Somogyi, M. Determination of blood sugars. Jour. Biol. Chem. 160: #1, 69-73, September 1945.
14. Nelson, N. A. A photometric adaptation of the Somogyi method for the determination of blood sugar. Jour. Biol. Chem. 153: #2, 375-380, May 1944.

LE RELATION INTER LE TEST DE GLUCOSA SANGUINEE A TRES HORAS E SIGNOS ORAL (I.E., CONSTATATIONES DENTAL)

Dr. med. dent. P. Moller e Dr. med. e dent. med. E. Cheraskin

SUMMARIO IN INTERLINGUA

Iste reporto analysa le relation inter (1) duo signos dental, i.e. clinic mobilitate dental e perditas de dente, e (2) le ver glucosa sanguinee a tres horas, como illo esseva determinate in tests de tolerantia pro glucosa in un gruppo de 100 patientes de routine dental.

Le analyse del valores medie del attributos pro le duo signos—tanto independentemente como etiam in combination—revela le facto que le configurationes es semper parabolic.

Un studio del coefficientes de variation pro omne le gruppos de glucosa sanguinee demonstra que ille coefficientes es generalmente plus basse al plus alte nivellos de glucosa. In plus, iste relation es plus clar in le caso del analyse del valores de glucosa sanguinee a tres horas que in le caso del valores in stato jejun o a duo horas.

Un studio del valores de probabilitate indica que statisticamente significative differentias de media esseva revelate in le analyse de clinic mobilitate de dentes e del combination del duo signos. In iste respecto il pare que le valores de probabilitate pro le comparationes de glucosa de sanguine a tres horas es multo plus significative que lo que esseva observate previemente in comparationes in stato jejun e post duo horas.

Le constatationes suggere que le mesmissime signos oral (i.e. clinic mobilitate dental e perdita de dentes) es associate tanto con hyper- como etiam con hypoglycemia.

Le datos colligite in le presente studio suggere que le relationes sub analyse non es associate significativemente con le factor del etate del patientes.

Le datos suggere que le relation de normalitate de glucosa sanguinee a tres horas es possibilemente plus restringite que lo que es generalmente opinate.

CHANGING CONCEPTS IN PERIODONTAL PROGNOSIS

ALLAN N. ARVINS, D.D.S., F.A.C.D.*

In the early days of periodontal practice, ultra conservatism was the approach when considering the prognosis of a case. Teeth were considered hopeless for many reasons, viz:

1. Bifurcation or trifurcation involvement
2. Excessive mobility
3. Loss of more than half the normal alveolar support
4. Pockets which approached the apex of the tooth
5. Periodontally involved teeth that were to serve as abutments (Non-vital teeth in this category were also condemned even when endodontic therapy had been expertly done.)

There can be little argument that a good proportion of such teeth, excepting the periodontally normal endodontically treated teeth, are still poor risks for retention. If all doubtful or questionable teeth are to be removed, of what need is the periodontist? Surely any practitioner can extract doubtful teeth and successfully treat the favorable ones.

The impact of public health information regarding tooth conservation is noticed more and more. No longer do patients complacently accept recommendations for multiple extractions and extensive restorations just because they have reached "middle age." The demand for an approach to treatment other than extraction, has stimulated periodontists to extend their vistas, and experiment with varied techniques. At first a few brave souls published preliminary reports of their private, almost secret, investigations. The usual hue and cry was raised by the conservatives whose main objections seemed to be that it was different from the status quo and therefore unacceptable. The results of some of these newer therapeutic methods could not be denied, however. Others were stimulated to attempt variations and extensions of their own. Such terms as gingivoplasty, osteoplasty, osteoectomy, root resection, provisional splinting, multiple splint-bridges, and vestibular extension have come into the periodontal lexicon only in recent years.

What does this mean in the total picture of periodontal therapy? It indicates a growing desire and trend to include in treatment, many teeth previously considered incapable of responding. To achieve this goal, the combined efforts of adjunct specialties are often essential. Included are the general practitioner, endodontist, and periodontist.

Teeth with bifurcation and trifurcation periodontal involvement are therapeutic problems. Associated with mobility, the prognosis is admittedly poor. If the etiological factors are difficult to remove, as in the case of systemic diseases or uncorrectable malocclusions, such teeth had best be extracted. Prolonged retention would endanger adjacent teeth by extension of the alveoloclastic process. Timely removal of the hopeless tooth permits filling in of the socket to the highest level of remaining bone, usually with improved proximal support to the adjacent teeth. (Fig. 1)

A B

Fig. 1A. Advanced bone loss involving trifurcation of upper first molar. Loss of common interproximal support is evident distal to second premolar and mesial of second molar.

Fig. 1B. Post extraction. Filling in of alveolus has added support to adjacent teeth enchancing their prognosis as abutment teeth.

* Associate Professor, Department of Periodontia and Oral Medicine, New York University College of Dentistry.

A B C

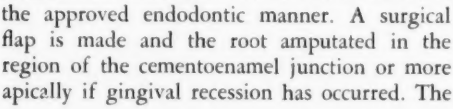
Fig. 3A. Splinted second molar prepared by endodontia for root resection of periodontally involved mesial root.

Fig. 3B. Immediate post-operative view.

Fig. 3C. Tooth in service as abutment for existing attachment partial denture. Filling in of alveolus can be expected as in Fig. 2. (Courtesy of Dr. Sidney Sorrin)

Even in cases where the involved teeth are firm, the inaccessibility of the "crotch" of the roots does not permit proper instrumentation by the dentist, or oral hygiene by the patient. The local support continues to diminish. In lower molar bifurcations, gingivectomy and exposure of the interradicular space are often of help. Upper molar gingival surgery is less satisfactory but sometimes delays the breakdown process.

In cases where one of the roots is severely involved, and this is frequently seen, resection of the affected root produces excellent results.[1] The tooth is devitalized and treated in the approved endodontic manner. A surgical flap is made and the root amputated in the region of the cementoenamel junction or more apically if gingival recession has occurred. The flap is sutured. Filling in of the alveolus of the extracted root follows and a healthy environment results. (Fig. 2 and Fig. 3) This method of treatment serves for both upper and lower multirooted molars. Teeth serving as abutments for bridgework can thus be retained, obviating the need for costly reconstruction. Frequently the loss of such a posterior abutment would necessitate a partial prosthesis where fixed bridgework is preferred.



A B

Fig. 2A. Trifurcation involvement of upper first molar with distobuccal root showing greatest bone loss. Loss of mesial support of second premolar complicates case analysis if molar were extracted.

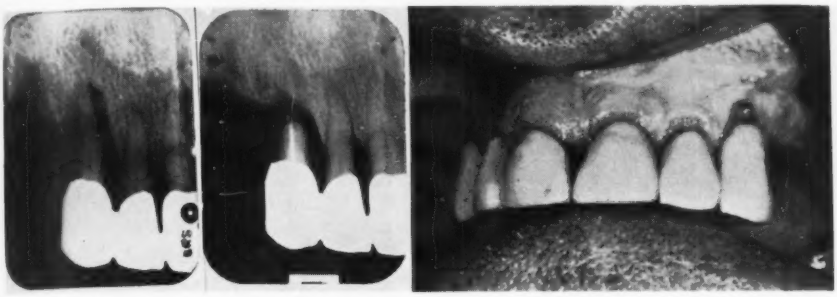
Fig. 2B. After endodontic therapy and resection of distobuccai root. Note restoration of normal distal bone level and three abutment-cantilevered pontic bridge avoiding need for unilateral partial denture.

Single rooted teeth included in multiple splint bridges may also be treated in a similar manner provided there are sufficient additional teeth to support the load.[2] (Fig. 4) Sectioning the root 3 mm. apical to the gingival margin will avoid excessive tissue retraction and result in clinically normal appearance.

This introduces the question of continuous fixation around the arch versus separation between selected abutment teeth. It has been argued that, in multiple fixed-splint bridges which include all or most of the units of a jaw, separation of abutments is advisable. Such unsoldered contacts are often selected between central incisors, or between canines and first premolars. The thought is that should an included abutment tooth fail, correction need not involve the total replacement. Also the difficulty of obtaining parallelism around the arch is avoided.

The argument in opposition is suggested here:

1. The direction of movement of periodon-



A B C

Fig. 4A. Hopeless involvement of canine serving as abutment for attachment partial denture.

Fig. 4B. Postoperative view after endodontia and root resection. Long root stump left because of gingival recession.

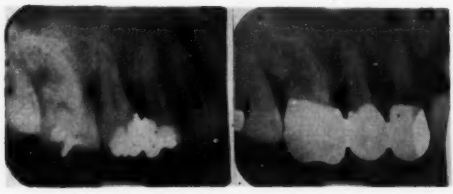
Fig. 4C. Postoperative clinical photograph. Upper left canine stump ends about 1 m.m. above gingival margin.

tally involved teeth (except in Class III mobility) is generally buccolingual. Therefore teeth tend to move in different directions according to their position in the arch; molars and premolars moving laterally, canines moving obliquely and incisors more or less anteroposteriorly. This variation in direction of movement produces a compensatory or reciprocal holding force when teeth in the several positions are secured together. A restoration or splint from first premolar to second molar can move as a unit since these teeth tend to move in the same axial direction. Inclusion of the adjacent canine, incisors, and finally posteriors on the opposite side as joined abutments results in increasingly greater stability.

2. Should a terminal abutment tooth adjacent to another bridge fail, the difficulty of replacement is apparent. Should all units be joined together the root resection method serves admirably to cope with the problem so that no change in restoration is required. As long as there are sufficient joined abutments to support the load, this procedure may be used for other teeth should the need occur.
3. Apparently the problem of parallelism of multiple abutments can be overcome by careful planning of preparations, except in cases of malposed teeth. This is evident from the larger number of such cases now being constructed.

In cases of excessive mobility of the Class III variety, extraction is not always indicated. If adequate bone support remains, occlusion can be corrected and stabilization effected. A case of a 23 year old girl was recently seen by the author which evidenced Class III mobility of all upper posterior teeth. Roentgenographically the findings were negative, even to the absence of thickening of the periodontal membrane space. Traumatic occlusion was apparent and the teeth moved noticeably in a buccolingual direction during masticatory excursions. Unfortunately the buccal and lingual periodontal membrane spaces do not visualize with our present roentgenographic techniques. Separating the marginal gingivae under anesthesia, it was possible to place a probe deeply, in an apical direction, between the alveolar bone and the root surface. In this instance although the buccal and lingual bone levels were normal the periodontal spaces were markedly widened, permitting extensive movement. Adjustment of occlusion and splinting are the treatments of choice in such a case and favorable results may be expected.

Splinting procedures have been of inestima-



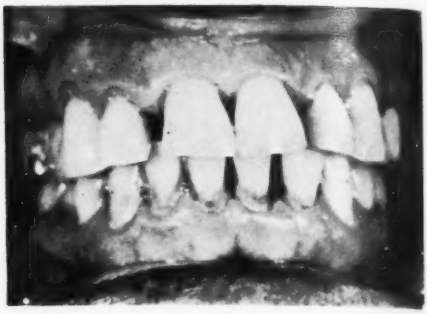
A B

Fig. 5A. Second premolar with advanced bone loss and mobility. Note absence of lamina dura. Questionable prognosis suggested temporary splinting and observation of results of curettage.

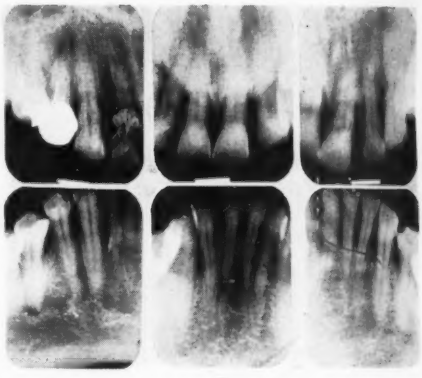
Fig. 5B. One year post treatment. Interim temporary splint has been replaced by permanent splint. Note reformation of lamina dura and improved bone level.

ble help to the periodontist, both the provisional and permanent varieties. Healing of a pocket and control of alveoloclasia are extremely difficult if not impossible at the site of a mobile tooth. The use of temporary internal acrylic splints in questionable cases and permanent splints in favorable ones has proved their value repeatedly. Improved tissue tone, reduction of pockets, and bone repair have all resulted from such supportive measures. (Fig. 5)

Temporary or provisional splinting of teeth by the internal acrylic splint technique offers a simple inexpensive method of determining the direction of response in questionable cases. Should treatment fail, the financial and time loss is minor. Obtaining a prolonged favorable response as a result of immobilization, a fixed permanent splint can be constructed to replace the temporary one. Provisional splints recommended by the author and Obin have been in service since 1951.[3]



A



B

Fig. 7A. Migrating mobile anteriors before orthodontic therapy and splinting.

Fig. 7B. Preoperative roentgenograms.

Teeth which have migrated as a result of

A B C

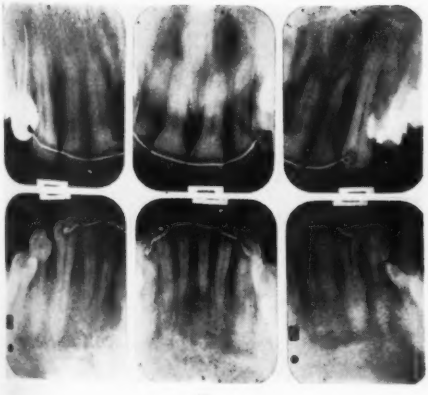
Fig. 6A. Realignment of labially migrated upper central incisor.
Fig. 6B. Lingual mirror view of permanent splinting using three-quarter crowns.
Fig. 6C. Labial view of completed case.

periodontal disease respond well when repositioned by orthodontic means and fixed in the corrected position by splints. (Figs. 6, 7, and 8)

Cases are frequently seen in which marked loss of alveolar support is evident in the roentgenographs. Clinical examination however reveals that the involved teeth do not have excessive mobility. In spite of the reduction of amount of bone, the remaining periodontal membrane space is normal. (Figs. 9, 10) Gingivectomy, occlusal equilibration, and careful maintenance can retain such teeth for many years. Deep infrabony pockets, even approaching the apex, have responded to flap operations or thorough subgingival curettage. (Figs. 11, 12) Prichard has shown remarkable results with this form of therapy.[4] The number of walls remaining surrounding a pocket has much to do with the chances of success.[5]

Determining the prognosis of periodontally involved teeth which would serve as abutments

A



B

Fig. 8 (same case as Fig. 7)

Fig. 8A. Treated case with teeth orthodontically repositioned and splinted with internal acrylic splint.

Fig. 8B. Postoperative roentgenograms. Wire is placed in prepared lingual channels which are then filled with acrylic using the Nealon technique. Favorable roentgenographic response indicates that a permanent splint will be a practical procedure.

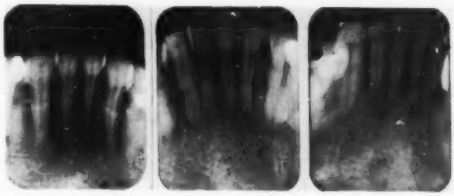
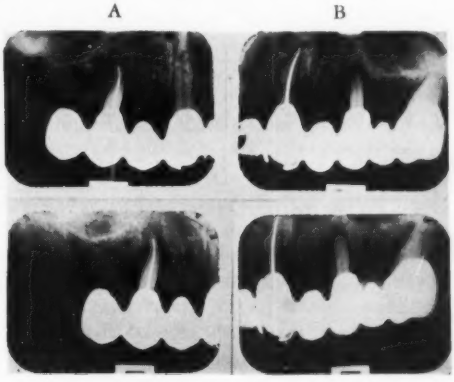


Fig. 9 Fig. 10A Fig. 10B

Fig. 9. Loss of alveolar support of lower anteriors. Normal periodontal membrane space and renewed crestal lamina dura indicate a favorable prognosis. Mobility is absent.

Fig. 10A. Pretreatment view taken in 1936. Patient refused extraction. Treatment was undertaken because mobility was not excessive, except for the central incisor with thickened periodontal membrane.

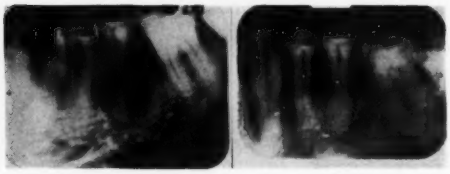
Fig. 10B. 1960, 24 years later, teeth still in position with relatively little mobility.



A B C D

Fig. 11A and B. Severe loss of periodontal support of second premolar abutments.

Fig. 12C and D. Post operative results 9 months after flap operation and thorough curettage.



A B

Fig. 12A. Marked periodontal destruction with pocket approaching the apex treated by deep subgingival curettage under anesthesia.

Fig. 12B. Post treatment with formation of new lamina dura.

for restorations is a difficult one. Loss of support and mobility often suggest extraction. The decision must depend upon the operator's judgment and experience. Splinting the involved tooth to adjoining teeth will often arrest the breakdown process permitting such a tooth to serve as a valuable additional abutment. A reasonable degree of success should be anticipated to avoid the embarrassment of future trouble. Should an error in judgment occur the root resection technique mentioned previously can be utilized to good advantage.

A word about the utilization of endodontically treated teeth. It has been shown that a properly treated, non-vital tooth must not be considered a "dead" tooth. Its cementum retains complete physiologic function, the integrity of the epithelial attachment remains and the tooth can perform all the functions of a normal tooth.[6] It would be wrong to advise removal of such teeth especially when their service as splinted abutment teeth would assist in the retention of periodontally weakened adjacent teeth.[7]

An interesting collateral observation has been noted in the study of periodontally affected teeth and their relation to pulpal anatomy. The physical relationship between the periodontal membrane, apical foramen, and accessory foramina is such that a differential diagnosis is often necessary to determine the original site of pathology. Pulpal disease may invade the periodontal space producing inflammation and destruction of the periodontium.[8] Periodontal pathosis may in turn extend via the membrane to the apex or through the lateral accessory foramina involving pulpal tissues secondarily. Often due to this dual involvement it is virtually impossible to determine the primary cause. We have seen teeth with severe periodontal damage, prepared for root resection by endodontic therapy, show remarkable periodontal improvement prior to the date set for the root surgery. Consideration should therefore be given to a careful study of the health of the pulp in recalcitrant periodontally involved teeth where the etiology is undetermined. It is often possible to arrest or heal such conditions by pulp therapy alone. (Fig. 13)

SUMMARY

It has been argued that failure to secure favorable results, after subjecting a patient to time consuming procedures, establishes a poor dentist-patient relationship. However, in cases where the patient is most anxious to avoid extractions and is thoroughly and honestly informed of the risks involved, such an approach is proper. Indeed, should failure result, the patient is secure in the knowledge that the questionable teeth were not arbitrarily removed but rather given every opportunity to respond to treatment. We have often heard a patient remark, "if the teeth I've lost had been treated perhaps they could have been saved." Since the individual response to treatment is a variable, would it not be advisable to treat questionable teeth for a period long enough to determine the degree of response? Frequent discussion of progress or lack of it will prevent the patient from assuming a false impression of the direction of treatment.

CONCLUSION

If our hope is to someday successfully treat teeth presently considered hopeless, new techniques must evolve from a searching inquisitiveness. It is not enough to be told by others "this cannot be done." We must find out for ourselves. Each man's office can be his research laboratory. Here with careful observation of the newer ethical techniques suggested, he may be encouraged to advance such techniques, one stage further.

A B C

Fig. 13A. Periodontal and periapical involvement of first premolar.

Fig. 13B. After endodontic therapy.

Fig. 13C. 2 years postoperative, note improvement in periodontal support.

Through such investigation and reportage a far greater degree of success may be obtained than we can possibly envision with our current methods.

36 Central Park South,
New York, N. Y.

BIBLIOGRAPHY

1. Messenger, T. F. and Orban, B., Elimination of Periodontal Pockets by Root Amputation, J. Period., 25:3, 1954.
2. Arvins, A. N., A Technique for Root Resection of Periodontally Hopeless Teeth Included in Multiple Splint Bridges, J. Dent. Med., 12:2, April, 1957, pp. 79-81.
3. Obin, J. N., and Arvins, A. N., The Use of Self-curing Resin Splints for the Temporary Stabilization of Mobile Teeth due to Periodontal Involvement, J. Amer. Dent. Assoc., 42, March, 1951, pp. 320-322.
4. Prichard, J., The Infrabony Pocket as a Predictable Procedure, J. Period., 28:202, 1957.
5. Goldman, H. M. and Cohen, D. W., The Infrabony Pocket: Classification and Treatment, J. Period., 29: 272, 1958.
6. Auerbach, M. B., Endodontia in Diagnosis and Treatment, J. Dent. Med., 8:4, 1953.
7. Lieban, E. A., A Survey of Technics for Treatment of Various Types of Infected Pulpless Teeth, J. the A. D. A., 38:42, 1949.
8. Hiatt, W. H., Regeneration of the Periodontium after Endodontic Therapy and Flap Operation, Oral Surg., Oral Med., and Oral Path., 12:1471, 1959.

CAMBIAMENTOS DE CONCEPTION IN LE PROGNOSE PERIODONTAL

Dr. chir. dent. Allan N. Arvins

SUMMARIO IN INTERLINGUA

In le prime stadios de disveloppamento del practica periodontal, un typo de ultraconservativismo esseva de moda in ponderar le prognose de un caso particular. Dentes esseva considerate como "perdite" pro multe differente rationes, i.e.:

1. Affection bi- o trifurcational.
2. Excesso de mobilitate.
3. Destruction de plus que un medietate del supporto alveolar.
4. Fascas proxime a apices dental.
5. Dentes con affectiones periodontal, con respecto a lor function de servir como supporto pro altere. Dentes non-vital esseva excludite ab iste function mesmo quando le therapia endodontic esseva perfecte.

On pote arguer que un therapia de longe duration in que il existe le risco de non-successo es additionalmente cargate per le risco del disveloppamento de un adverse relation inter le patiente e le dentista. Tamen, in casos in que le patiente desira ardentemente evitar un extraction, ille riscos debe esser acceptate providite que le patiente ha essite informate meticulose- e honestemente con respecto al difficultates a expectar. Si alora le resultato final es un non-successo, le patiente comprende que le dentes in question non esseva sacrificate arbitrarimente sed que illos habeva omne opportunitate possibile de responder al tractamento.

Si nostre spero de apprender un die a tractar a bon successo dentes que nos considera hodie como perdite in ultra de omne possibilitate de salvar los, nove technicas debe resultar de nostre persistentia inquisitori. Nos nunquam debe contentar nos de acceptar le assertion per alteros que un procedimento particular non es practicabile. Nos debe convincer nos per nostre proprie experientia. Le sala de consulta de omne membro de nostre disciplina pote funger como laboratorio de recerca. Observante meticulosemente le nove proponimentos methodologic (in tanto que illos es ethicamente acceptabile), nos pote—per nostre travalio in nostre "laboratorio" personal—promover le technicas usate per nostre profession.

Per tal investigationes, e per le reporto de lor resultatos, un grado de successo va devenir attingibile que non es imaginabile super le base del methodos currentemente in uso.

PSYCHOTHERAPEUTIC AGENTS*

MILTON J. SCHIFFRIN, Ph.D.†

In "Drugs That Shape Men's Minds," Aldous Huxley makes the following remarkable statements: "In the course of history many more people have died for their drink and their dope than have died for their religion or their country. The craving for ethyl alcohol and the opiates has been stronger, in these millions than the love of God, of home, of children; even of life." If these statements are true then we must ask: what are the causes, what does it mean, and what can we do about it? These questions require attention by physicians, psychiatrists, biochemists, social anthropologists, religious leaders, legislators, and law-enforcement agencies. The entire problem is rapidly becoming more urgent because we are on the threshold of an era which will have drugs more potent, more versatile, and more insidious than alcohol and the narcotics.

We pride ourselves on our modern civilization, and yet we use this same environment as an excuse for seeking escape. We rationalize that the stress and strain of today's society produce tensions and anxieties so great that we must drug ourselves in order to endure this outrageous fortune. How can we believe that our problems are the most severe that man has ever known? What is the greatest fear of man? It is fear of the unknown. Our forefathers had this to a larger extent than we, for we have more knowledge. Theirs was a world of many more unknowns. They did not understand the bubonic plague and they feared it. We know how to control the plague, and what is more, we know precisely how radiation can burn us to a crisp! We share at least one fear of the unknown with our forbears—what will tomorrow bring, or will there be a tomorrow for us? I submit that tension and anxiety are normal, indeed necessary and useful, components of living. Now I confess another fear—that of having wandered into the pulpit. I descend to the realm of clinical pharmacology.

Let us then take it for granted that there are some people who have more frequent need of alteration of their mood and reactions than is true of most people. Let us also agree that there is the possibility that situations might arise in life where the temporary use of psychotherapeutic drugs would be without serious hazard and benefit the individual and society.

There are many drugs which can be classified as psychotherapeutic agents. Of course we have to disown such claims as the one in which colloidal aluminum hydroxide is touted as a tranquilizer for the digestive tract. Seriously there are more than 50 drugs which can be classified as ataractics. It is difficult indeed to find one's way among the mass of literature, the large number of trade names, and the reams of advertising, each shouting, "I am the best." Be that as it may, my purpose today is to try to give you some guideposts and generalizations which I hope will be useful to you in finding and using psychotherapeutic drugs which will help your patients. It might be well to keep in mind some questions which would help to guide you in the use of these drugs in dentistry. These questions are:

1. Do these drugs allay apprehension and favor cooperation?
2. Is it practical to use them in the treatment of dental patients?
3. Is the response to the drug reliable?
4. Does the drug present any hazards to the patient?
5. Are the drugs compatable with other agents commonly used in dentistry?

Table 1 summarizes the three general groups of compounds if we exclude barbiturates, the non-barbiturate sedatives and the narcotics.

* Presented before the Seventeenth Annual Meeting of The American Institute of Oral Biology, The Hotel Riviera, Palm Springs, October 10, 1960.

† Clinical Assistant Professor in Anesthesiology, University of Illinois Medical School; Director of Clinical Research, Hoffmann-La Roche, Inc.

TABLE I

GENERAL CLASSIFICATION OF PSYCHOTHERAPEUTIC AGENTS

1. Psychotomimetics, hallucinogens
2. Tranquilizers
   a. Psychotherapeutic antihistamines
   b. Central skeletal muscle relaxants
   c. Central sympathetic suppressants
   d. Central parasympathetic suppressants
   e. Miscellaneous agents
3. Stimulants
   a. sympathomimetics
   b. psychic energizers

These three groups are as follows:

1. Psychotomimetics or hallucinogens: Mescaline and LSD are examples of this group. They are of no practical importance in oral surgery and I mention them only because they may be useful tools in helping us to understand the biochemistry of some of the psychoses. If we can understand the underlying biochemical dynamics in these types of mental disorders, we may some day have drugs which will be specific in their action on the psychoses.

2. Tranquilizers or ataractics: One dictionary defines ataraxy as "freedom from disturbance of mind or passion." There are at least fifty different trade names for almost as many drugs in this general category. The drugs in this group range from compounds such as meprobamate (Equanil, Miltown) to chlorpromazine (Thorazine).

3. Stimulating agents: Drugs of this class act to increase alertness and awareness. Some of the agents in this class such as amphetamine act to increase blood pressure, heart rate, etc. and in many ways mimic the effect of epinephrine. There are, however, some psychic energizers which appear to act by virtue of their effectiveness as monoamine oxidase inhibitors. Some examples of these are iproniazid, isocarboxazid and nialamide.

As indicated above, we need not concern ourselves with the hallucinogens. The first group which deserves our attention is the tranquilizers. We cannot give you a table showing all of the tranquilizers as one kind of pharmacologic agent. The American Medical Association gave up on this and now describes these drugs in accordance with their fundamental pharmacologic properties. Unfortunately, the latter is not always known. The five types of tranquilizers under the A.M.A. system are:

1. Psychotherapeutic antihistamines
2. Central skeletal muscle relaxants:
   A. Nonsedative
   B. Sedative
3. Central parasympathetic suppressants
4. Central sympathetic suppressants
   A. Phenothiazine derivatives
   B. Rauwolfia derivatives
5. Miscellaneous agents

The psychotherapeutic antihistamines, such as hydroxyzine (Atarax, Vistaril) are primarily antihistaminic agents with mild tranquilizing effects. They are relatively safe drugs without clinically significant effect on the respiratory and circulatory systems. Promethazine (Phenergan) is a very useful drug, and it too, is an antihistamine. We have chosen to classify it with the other phenothiazine derivatives because of its important clinical use as a phenothiazine type suppressant of central sympathetic activity.

TABLE II

CENTRAL SKELETAL MUSCLE RELAXANTS

A. Nonsedative, mephenesin

Alvosyl	Myoten	Tolansin
Dioloxol	Myoxane	Tolosate
Kinavosyl	Oranixon	Toloxyn
Lissephen	Prolax	Tolserol
Mephenesin	Saserol	Tolulox
Mepherol	Sinan	Tolyspaz
Mephson	Spasmolyn	

chlormezanone—Trancopal

B. Sedative

meprobamate-Equanil, Miltown, Meprospan, Meprotabs
meprobamate with benactyzine-Deprol
phenaglycodol-Ultran
promoxolane-Dimethylane

Some of the central skeletal muscle relaxants are shown in Table II. They are of two types, sedative and nonsedative. Drugs of the mephenesin type produce skeletal muscle relaxation without sedation. The tranquilizing effects of these drugs are, therefore, in large measure dependent upon the degree of muscular relaxation. The sedative type muscle relaxants, such as meprobamate, have effects on skeletal muscles which resemble those of mephenesin. The value of the drugs in this group is based on three characteristics: sedation, muscular relaxation, and safety. The sedation they produce is usually free of respiratory or circulatory depression. They are useful sedatives for the relief of anxiety or tension states but are generally of little value in the management of psychoses. The muscular relaxation they provide is usually of longer duration than that produced by mephenesin.

There are two general types of central sympathetic suppressants, the phenothiazine derivatives and the rauwolfia derivatives. The former type is shown in Table III. We have included chlorprothixine (Taractan) in this category because of its pharmacologic characteristics, although it is not a phenothiazine.

TABLE III
CENTRAL SYMPATHETIC SUPPRESSANTS

Generic Name	*Trade Name*
prochlorperazine	Compazine
chlorpromazine	Thorazine
trifluperazine	Stelazine
promazine	Sparine
perphenazine	Trilafon
methoxypromazine	Tentone
thioridazine	Mellaril
thiopropazate	Dartal
triflupromazine	Vesprin
mepazine	Pacatal
fluphenazine	Prolixin
fluphenazine	Permitil
promazine + meprobamate	Prozine
chlorpromazine + dextroamphetamine	Thora-dex
prochlorperazine + isopropamide	Combid
prothipendyl	Timovan
chlorprothixine	Taractan
promethazine	Phenergan

The phenothiazine types of central sympathetic suppressants are among the most useful tranquilizers. In general, among the common effects they produce are sedation, antiemetic and antinauseant, antihistaminic, depression of reflex irritability, depression of conditioned reflexes, adrenolytic, potentiation of anesthetic and analgesic agents, hypotension, tachycardia and depression of central control of body temperature. There are numerous variations in the degree of these effects produced by individual members of the phenothiazine group. As examples: mepazine has more pronounced effect on the parasympathetic system than has chlorpromazine; promethazine has the most potent antihistaminic effects, and appears to cause little depression of vasomotor tone. The undesirable reactions, other than those listed above, seem to be related to the nature of the individual drugs, rather than some characteristics of the group as a whole.

The other group of central sympathetic suppressants are the rauwolfia derivatives which are shown in Table IV. This group of drugs has the following general properties: a slowly developed sedation, bradycardia, a gradual reduction in blood pressure, diminished anxiety or tension, nasal stuffiness, and occasionally anorexia or constipation. The depression of the psyche may be so severe in some individuals as to lead to suicide. These drugs should there-

TABLE IV
CENTRAL SYMPATHETIC SUPPRESSANTS

Generic Name	*Trade Name*	
reserpine	Rauloydin	Roxinoid
	Raurine	Sandril
	Reserpine	Serpasil
	Reserpoid	Serpiloid
deserpidine	Harmonyl	
rescinnamine	Moderil	
syrosingopine	Singoserp	
alseroxylon	Rauwiloid	
rauwolfia	Raudixin	Rauserpa

fore not be used in depressed patients. The hypotensive effects are believed to be of central origin. The bradycardia can sometimes be blocked by atropine. The effects on the gastrointestinal tract include increased motor and secretory responses. For this reason, these drugs are contraindicated in the presence of peptic ulcer. The importance of the rauwolfia type drugs to the oral surgeon is that a patient who is receiving these agents is an increased surgical risk because of the tendency to hypotension, the potentiation of this reaction by some anesthetic agents and techniques, and the relative refractory state to some vasopressors. Because of this consideration we have been forced to make a rigid rule at Illinois that no patient who is receiving a rauwolfia type drug will be accepted for surgery unless the situation is a true emergency. We much prefer to discontinue the use of this type of agent for, at least, two weeks prior to surgery.

The central parasympathetic depressants such as benactyzine (Suavitil) are characterized by atropine-like properties, sedation, and modest antihistaminic effects. It must be noted that this type of drug will potentiate general anesthesia produced by the intravenous administration of barbiturates. As might be expected of agents with these properties, the most annoying reactions are similar to those of atropine, particularly as regards accommodation and dryness of the mouth. We are not aware of any reports of severe tachycardia or serious toxicity. Benactyzine appears to be an agent which would be desirable when moderate sedation with atropine effects are required. Azacyclonol (Frenquel) occupies a rather unique position among the tranquilizers. It is closely related chemically to pipradrol, an excitant of the central nervous system, yet azacyclonol itself depresses, and has a marked ability to control the symptoms of toxic hallucinations and acute schizophrenia. It appears to potentiate the effects of anesthetic and analgesic agents. Its place in the management of the surgical patient has yet to be evaluated fully. It might be considered for use in the treatment of postoperative psychosis.

Chlordiazepoxide (Librium) is the first of a new chemical class of tranquilizers which has unusual pharmacological properties. According to Randall: "It has the tranquilizing properties of chlorpromazine and reserpine in animals but it lacks the autonomic blocking effects of these compounds. It is markedly more potent than meprobamate in its muscle relaxant properties. It has anticonvulsant properties similar to those of phenobarbital but it does not induce hypnosis. It has appetite stimulating properties in rats and dogs which suggest an anabolic activity unusual for tranquilizers."

Although Librium was made available to the profession rather recently, an unusually large amount of clinical experience has been reported. This drug seems to possess the three essential characteristics of a good tranquilizer: rapid onset on action, effectiveness, and safety. It has a broad clinical spectrum of effectiveness which covers all the indications for drugs such as meprobamate and overlaps some of the indications for the phenothiazines. Some elderly patients seem to have a low tolerance for this drug, therefore the initial dosage should be reduced in such patients.

The general classification of stimulants used in this discussion is shown in Table V. The psychomotor stimulants include a number of sympathomimetic amines. The amphetamines are typical examples of this class. They stimu-

TABLE V
GENERAL CLASSIFICATION OF STIMULANTS

1. Psychomotor Stimulants
   a. amphetamine, dextro amphetamine
   b. methamphetamine
   c. phenmetrazine (Preludin)
   d. methylphenidate (Ritalin)
   e. pipradrol (Meratran)
   f. imipramine (Tofranil)

2. monoamine oxidase inhibitors
   iproniazid (Marsilid)
   isocarboxazid (Marplan)
   phenelzine (Nardil)
   beta phenylisopropylhydrazine (Catron)
   nialamide (Niamid)

iate the central nervous system but, at the same time, they may produce undesirable cardiovascular effects. Pharmacologically, Preludin is related to the amphetamines. Preludin has some stimulating effects on the central nervous system but these are not prominent and the chief clinical use of the drug is an an appetite-depressant.

Ritalin is a mild cortical stimulant and is useful in the treatment of various types of depression. It is more potent than caffeine and less so than amphetamine. It usually produces fewer sympathomimetic and cardiovascular effects than either caffeine or the amphetamines. Meratran is clinically useful in the treatment of depressive states that are not associated with severe anxiety or compulsive behavior. It has little effect on the cardiovascular system and does not usually give rise to anorexia, insomnia and euphoria.

Tofranil differs from the previous drugs in this group by its usefulness in the treatment of depressed states without producing euphoria or psychokinetic stimulation. Depression is the major indication for Tofranil, it has limited effect on other psychoses. The adverse reactions are quite similar to those of atropine. Postural hypotension sometimes occurs and seems to be related to dosage.

The monamine oxidase (MAO) inhibitors are potent and useful drugs for the treatment of some psychoses, especially those associated with depression. The first of this group, Marsilid was developed as an analogue of isoniazid for the treatment of tuberculosis. It was discovered that Marsilid is an irreversible inhibitor of monoamine oxidase. This enzyme provides a major metabolic pathway for the destruction of important biologic amines such as epinephrine, norepinephrine and serotonin. Consequently, when the enzyme is inhibited, there is an accumulation of these amines. These MAO inhibitors have been used also in the treatment of angina and rheumatoid arthritis. The general use of these drugs has been limited by their toxicity. Postural hypotension and jaundice have been especially troublesome. These are helpful drugs when they are used properly. It is imperative that the therapeutic benefit that they might achieve be measured carefully against their toxicity.

This has been all too long a story about the psychotherapeutic drugs. In truth though, this is still a most superficial outline of the subject. What then, can you derive from this? I suggest two items for your consideration.

First, the widespread use of these drugs makes it necessary for you to know which of your patients are receiving such therapy. For example, the patient who is receiving a phenothiazine may often respond in an exaggerated and alarming way to the administration of narcotics or general anesthetics.

Second, some of these drugs can be used to good advantage in your practice. Select a few which seem to have the characteristics you desire. Study and use them until you are familiar with what they can and cannot do for your patients. Any drug which acts quickly, has a wide margin of safety, is dependable in its effect, and can obtund the stress of tension and anxiety, is worthy of your consideration.

AGENTES PSYCHOTHERAPEUTIC

Dr. phil. Milton J. Schiffrin

SUMMARIO IN INTERLINGUA

Le objectivo que io desira servir per iste discurso es offerer a vos principios-guida e generalisationes que—io lo spera—va esser de adjuta a vos in trovar e in usar drogas psychotherapeutic que pote esser benefic pro vostre patientes. Il es de valor, sin dubita, re-signalar certe questiones que pote funger como base de orientation in vostre uso del drogas in question in le campo del dentisteria. Tal questiones es:

1. Iste drogas, pote illos alleviar le apprehension del patiente e promover su cooperation?
2. Es le uso de ille drogas practicabile in le tractamento de patientes dental?
3. Es le responsa a ille drogas certe e fidel?
4. Presenta tal drogas riscos ab le puncto de vista del patiente?
5. Es ille drogas compatibile con altere agentes que es communmente usate in le dentisteria?

Primo, le extense uso del drogas in question impone a vos le necessitate de determinar le quales inter vostre patientes es jam sub tractamento per illos. Per exemplo, le patiente qui se trova sub tractamento per phenothiazina responde non infrequentemente de maniera alarmante e exaggerate al administration de narcoticos o anestheticos general.

Secundo, certes del drogas in question pote esser usate a grande avantage in vostre practica. Il es a recommendar que vos selige un numero restringite de illos, del genere con characteristicas que pare corresponder a vostre requirimentos. Studia e usa los usque vos es familiar con lo que illos pote e con lo que illos non pote facer pro vostre patientes. Omne droga que age rapidemente, que possede un large margine de securitate, que es constante e fidel in su effectos, e que pote obtunder le stress de tension e anxietate merita vostre consideration.

FOCAL INFECTION

D. BIRKHAHN, B.D.S.I., F.D.S.R.C.S. Eng.*

Fifty years have passed since the concept of focal infection was introduced by Hunter and Billings as a consideration in the general medical and dental health of the individual. This theory has waxed and waned from receiving serious attention to almost complete disinterest, with the result that the last half century has witnessed periods where extensive surgery was executed on the slightest pretext, on the assumption that certain organs were the seat of the individual's chronic malady; on the other hand, there were individuals and periods where the concept of ultra-conservatism held sway and medical and dental practitioners were blinded to the presence of obvious sepsis. These pictures were particularly manifest in the treatment of dental and oral diseases. Today, while much has still to be known about the exact importance and role of foci of infection and their metastatic effects, certain views and opinions are accepted. While I will mention the main foci of infection, I intend to deal more particularly with the dental foci.

The oral foci include:

1) Chronic gingivitis and periodontal disease with or without pus pockets;
2) Vital, but infected pulps;
3) Non-vital infected pulps;
4) Apical infections and cysts from necrotic pulps and improperly treated and filled root canals;
5) Infected retained root tips;
6) Residual infections after extraction;
7) Radicular, dentigerous and multilocular cysts;
8) Salivary calculi with infections, and
9) Chronic osteomyelitis of the jaws.

The non-dental foci include diseases of the tonsils, sinuses, kidneys, prostate, osteomyelitis and suppurative infections of the skin.

At one time all avital teeth were considered infected. Several workers, including Sommer, Crowley, Ostrander, Morse and Yates, have shown that anything from 11% to 53% of non-vital teeth yield negative bacteriologic cultures depending on their roentgenographic classification.[1, 2, 3] The teeth were classified roentgenographically into two groups — "circumscribed radiolucent" and "diffuse radiolucent." The radiolucency is diagnostic of a destruction of the periapical base by the activity of bacteria or their toxins. The teeth with diffuse radiolucent areas around their apices yielded a higher percentage of positive bacteriologic cultures than those with circumscribed radiolucent areas. Absorption of bacteria or toxins from the periapical tissues is an example of Closed Sepsis.

Also these workers have shown that 50% of clinically vital pulps yield positive cultures.[3] A significant factor, however, is the infrequency of isolation of haemolytic streptococci organisms, which have been under suspicion as a possible aetiologic factor in rheumatoid arthritis and rheumatic fever. On the other hand, the relatively high frequency of isolation is evident for Streptococcus Viridans, which is the causative organism in Subacute Bacterial Endocarditis.

The only true-toxin-producer organism found in root canals is the haemolytic streptococcus and the percentage varies from 0.5% to 2.3%, as shown by three independent investigators.[2, 3, 4]

It is not possible to know whether a tooth is infected or not by the presence of a radiolucent area around the apex unless demonstrated by bacteriologic culture. The diagnostic competence of the reporter must be ascertained to assess the validity of case reports concerning aetiologic significance of oral foci of infection.

* Department of Oral Diagnosis and Oral Medicine Hebrew University-Hadassah School of Dentistry. Founded by Alpha Omega Fraternity, Jerusalem, Israel.

Many opinions have been based on assumption rather than scientific fact.

PERIODONTAL DISEASE

Probably of greater importance as a focus of infection is periodontal disease, because in relation to periapical infection around non-vital teeth, here a much larger area is usually involved. Even if we grant that every pulpless tooth is not infected, we must admit that every tooth affected periodontally is theoretically infected and must be treated or removed to eradicate the existing infection.[6] It can safely be stated that at least 20 times the absorption surface is involved in an average case of periodontal disease than in a well developed chronic periapical abscess.[5] Here the factor of Open Sepsis comes into play and understandably plays a greater role, as septic material may spread by direct communication causing ascending parotitis, chronic glossitis or pharyngitis.

Secondly, septic material may also gain entrance to the body via the blood and lymphatic systems. The rich blood supply to the gingivae from those vessels supplying the periodontal membrane, alveolar bone and connective tissue stroma allows for a ready exit of organisms from the periodontal pocket. There is an abundant lymph supply to the gingivae and soft tissues, and infection can easily reach neighbouring lymph nodes.

Several investigators have carried out experiments on patients with varying degrees of periodontal disease and either by massaging the gums or making the patients chew on paraffin lumps, it has been shown that positive blood cultures could be demonstrated up to 10 minutes after the stimulation of the gingivae. Okell and Elliott took blood cultures before and after extraction of teeth of patients with no obvious periodontal disease and found that 34% demonstrated bacteremia, usually Streptococcus Viridans.[7]

The incidence of bacteriemia in extraction cases when moderate or marked gingival disease was present was significantly greater than when it was absent: in the former cases it reached 75%.[7]

Ray and Orban found that 69% of the gingival biopsies from 100 patients with some degree of gingivitis showed necrotic foci deep in the gingival tissue. They conclude "that the frequency and multiple occurrence of such necrotic foci in a chronic disease stamps even a simple gingivitis as a disease having the potentiality of leading to systemic disturbances."[8]

Richards carried out bacteriologic blood studies following irritation of foci of infection in various organs including joints, tonsils, gums, prostate and boils. The bacteriemia created by the irritation of the tonsils was markedly obvious and after one hour 7.5% cases still exhibited positive blood cultures.[9]

Foci of infection may initiate or affect the course of a malady, i.e. hypertension, TB., syphilis, diabetes, prostatitis, malignant disease of the mouth, oesophagus, stomach or intestine.

MECHANISM OF FOCAL INFECTION

The mechanism of focal infection is suggested as operating in one of four ways:—

1. Bacteria may be discharged from the focus onto a free surface whence, conveyed by mechanical means, they determine an extension of the disease by re-inoculation;
2. Bacteria may be conveyed to distant parts of the body by way of the lymphatics or blood stream. They may be arrested in the nearest lymph nodes, leading to lymphadenitis or even to abscess formation. If the bacteria pass this barrier, one of three things may happen:—
   (a) They may multiply in the blood stream;
   (b) They may be conveyed alive to a suitable nidus, where they will multiply and infect the surrounding tissues;
   (c) They may, by the process designated by Adami as "subinfection," produce a slow but progressive atrophy with replacement fibrosis in various organs of the body. The removal of the focus does not allow *restitutio ad integram* due to irreversible damage.
3. Products of bacterial metabolism may reach and damage remote parts of the body;
4. Bacteria at the focus may undergo dissolu-

tion: dissolution products diffusing into the blood or lymph may sensitize various tissues of the body in an allergic sense, and later liberation of dissolution products may result in an allergic reaction. On the other hand, if absorption of bacterial toxins is prevented by chronic inflammatory changes or by encapsulation of the primary focus, or if upon absorption the toxins are effectively neutralized by natural or acquired toxins, ill health is not to be expected.[10]

All actual evidence in favour of these theories is totally clinical, largely suggestive and circumstantial. Its complete acceptance must be largely dependent on faith. And we must remember the definition of faith—that quality which enables us to believe what we know to be untrue. From a practical point of view to de-foci a patient is justifiable.

Much has been written about the relationship of dental foci of infection to specific types of systemic disease. The earlier literature particularly reported many instances in which diseases of the joints, heart, kidneys and eyes were cured or relieved by the removal of dental foci of infection. More recent studies tend to disprove some of the earlier assertions.

JOINT DISEASES

Oral foci can be disregarded as etiologic factors in joint diseases of specific infection such as gonorrhoea, tuberculosis, pneumonia, typhoid, syphilis, and the dental surgeon should expect an accurate diagnosis of the joint disease to accompany a physician's referral of a patient for consultation.[11]

RHEUMATIC FEVER

Haemolytic streptococci are attributed as a direct or indirect cause of rheumatic fever. The great tendency of upper respiratory infections to induce rheumatic attacks and the close relationship of epidemics of haemolytic streptococci and rheumatic fever are to be noted.[12] Massler and McDonald have shown that in Chicago, where the incidence of rheumatic fever is low, haemolytic streptococci in the gingiva of normal mouths is 6% and 11.6% in the tonsils.[13]

VALVULAR HEART DISEASE

Subacute Bacterial Endocarditis caused by Streptococcus Viridans has been shown to be a conclusive example of focal infection from a dental focus. The Streptococcus Viridans is found in infected root canals. The mode of entry is via the blood stream and a transient bacteremia is observed after extractions or any mechanical instrumentation of the periodontal tissues.

Unless a complicated condition accompanies the extraction or the instrumentation, the bacteremia is of short duration, lasting only 10 to 30 minutes in most patients. The bacteremia in the normal individual is probably of little significance since the blood stream quickly destroys the newly introduced organisms. In the individual with valvular heart disease, those bacteria may localize in the heart valves and produce subacute bacterial endocarditis.

RENAL DISEASE

The evidence available is not very much in favour of oral foci of infection in renal disease. Lyons probably evaluates the position most rationally in his discussion on oral bacteriology and renal disease. He says, "Nephritis is another disease which is assumed to be related to foci of infection. We are aware that acute nephritis occurs after infections of the haemolytic streptococci and that exacerbations of nephritis are associated with re-infection with haemolytic streptococci. Because of the close relationship with haemolytic streptococci, it is indeed difficult to see how teeth which harbour chiefly Streptococci Viridans are necessarily involved. After the nephritis is well established and albuminuria is persistent, it is difficult to see how the removal of teeth will alter the course of the disease.[14]

OCULAR DISEASE

As in keeping with the general opinion of focal infection the ophthalmologic literature in

the 1920's appeared to be imbued with the notion of startling recovery of patients with uveitis following the removal of "foci of infection" in the teeth, tonsils, nasal sinuses or genito-urinary tract. Guyton and Woods (1941) stated, "the requirements for a definite diagnosis of a relationship between uveitis and foci of infection cannot be regarded as too rigid. It may be fairly stated that the role of foci of infection in the causation of endogenous uveitis is far from settled. Primary foci of infection in some instances may be the direct cause of uveitis. But their role in the production of endogenous ocular disease is certainly not as great as once believed, and little or nothing is to be gained by the indiscriminate eradication of infections of the teeth, tonsils, sinuses and genito-urinary tract. A reasonable method of handling such infections in patients with uveitis would be to treat them in exactly the same manner as though no uveitis were present—radical procedures being employed only when the infection was sufficiently severe to warrant them in any event."[15] If current research should provide sufficient evidence that certain types of ocular diseases can be ascribed to hyperallergic responses of the tissues involved, due to sensitization by previous bacterial invasions of the human body, then it will have to be shown that in man these sensitizations develop to the Viridans and non-haemolytic strains of streptococci or their products, since these organisms are the normal residents of infected non-vital teeth.[2, 3, 4]

DERMATOSIS

Dermatologists are generally agreed that eczema and urticaria are the two most likely skin conditions to be related with foci of infection as an etiologic or contributory factor. Eczema in many cases is of unknown origin, whilst other cases are attributed to an allergic background. Ormsby and Montgomery state that urticaria is the result of the action of various toxic substances introduced from without or produced within the body of sensitized individuals. In many instances it is an allergic reaction induced by the introduction of foreign protein.[16] It is thus seen that these conditions can be connected with the mechanisms of focal infection already stated.

Hans Selye has probably contributed the most acceptable explanation of the mechanism of focal infection in his explanation of the alarm reaction and the General Adaptation Syndrome.[17] This explains the reason why in some months gross sepsis has seemingly no harmful effect on some organs, whilst in others, when the body is subjected to stress, the slightest infection will cause or aggravate a disease process elsewhere in the body.

CONCLUSION

The rationale of elimination of foci of infections should also consider other foci outside the mouth, if it is decided to remove oral foci of infection. Oral infection is *e pluribus unum.*

Definitely infected tonsils, teeth, gums, sinuses, etc., are in no more keeping with good health than an abscess or an obviously infected tissue or organ.

The presence of infected foci, even in individuals without systemic disease, requires treatment as a general health measure.

SUMMARY

(1) The two main reservoirs of oral foci of infection are found in avital root canals and in periapical lesions, and in the tissues affected in periodontal disease.

(2) The pathogenicity of oral bacteria is discussed.

(3) The mechanism of focal infection is suggested, but there is no scientific method of proving its validity.

(4) Oral foci of infection are discussed in relation to joint diseases, rheumatic fever, valvular heart disease, renal disease, ocular disease and dermatosis.

Hebrew University-Hadassah
School of Dentistry,
Founded by the
Alpha Omega Fraternity,
Jerusalem, Israel

BIBLIOGRAPHY

1. Sommer, R. F., and Crowley, Mary C.: Bacteriologic verification of roentgenographic findings in pulp involved teeth, J.A.D.A. 27:723, 1940.
2. Morse, F. W. Jr., and Yates, M. F.: Follow-up studies of root filled teeth in relation to bacteriologic findings, J.A.D.A. 28:956, 1941.
3. Ostrander, F. D., and Crowley, Mary C.: The effectiveness of clinical treatment of pulp-involved teeth as determined by bacteriological methods, J. Endodontia 3:6, 1948.
4. Hayes, R. L.: Clinical and bacteriological study of 340 pulp therapy cases, J. D. Res. 22:301, 1943.
5. Miller, S. C.: Textbook of Periodontia, Blakiston Co., Philadelphia, ed. 3, 1950, p. 685.
6. Sand, R. A.: Periodontal sepsis in relationship to systemic disease, J. Periodont. 11:18, 1940.
7. Okell, C. C., and Elliott, S. D.: Bacteriemia and oral sepsis with special reference to the aetiology of subacute endocarditis, Lancet 2:869, 1935.
8. Ray, H. G., and Orban, B.: Deep necrotic foci in the gingiva, J. Periodont. 19:91, 1948.
9. Richards, J. H.: Bacteriemia following irritation of foci of infection, J.A.M.A. 99:1496, 1932.
10. Appleton, J. L. T.: Bacterial infection with special reference to dental practice, Lea & Febiger, Philadelphia, ed. 3, 1944, p. 100.
11. An evaluation of the effect of dental foci of infection on health, J.A.D.A. 42:656, 1951.
12. Hench, P. S., et alia: Rheumatism and arthritis: Review of American and English literature of recent years (Ninth rheumatism review) Part 1, Ann. Int. Med. 28:66, 1948.
13. Massler, M., and McDonald, J. B.: The occurrence of Beta haemolytic streptococci on the gingiva of normal young adults, J.D. Res. 29:43, 1950.
14. Lyons, R.: An appraisal of the focal infection theory with special reference to arthritis, J. Endodontia 1:39, 1946.
15. Guyton, J. S., and Wood, A. C.: Aetiology of uveitis: A clinical study of 562 cases, Arch. Ophth. 26:983, 1941.
16. Ormsby, O. S., and Montgomery, H.: Diseases of the Skin, Lea & Febiger, Philadelphia, ed. 7, 1948.
17. Selye, H.: The general adaptation syndrome and the diseases of adaptation, J. Clin. Endocrinol. 6:117, 1946.

INFECTION FOCAL

D. Birkhahn (B.D.S.I., F.D.S.R.C.S. Eng.)

SUMMARIO IN INTERLINGUA

Multo remane a clarificar con respecto al signification e al rolo de focos de infection e lor effectos metastatic, sed certe vistas e opiniones es generalmente acceptate in nostre die. Io va mentionar le focos principal de infection in general, sed io va discuter in particular le focos dental.

Le focos oral include:

1. Gingivitis e morbo periodontic chronic con o sin tascas de pus.
2. Pulpa vital sed inficite.
3. Pulpa non-vital e inficite.
4. Infectiones e cystes apical ab pulpa necrotic e canales de radice mal tractate e mal plenate.
5. Inficite punctas de radice residue.
6. Infectiones residue post extraction.
7. Cystes multilocular radicular e dentigere.
8. Calculos salivari con infection.
9. Osteomyelitis chronic del maxillas.

Le focos non-dental include morbos de tonsilla, de sinos, del renes, e del prostata, e osteomyelitis e infectiones suppurative del pelle.

Le duo major reservoirs de focos de infection oral es incontrate in canales de radice non-vital e in lesiones periapical, e in le tissus que es afficite in morbo periodontal.

Le pathogenicitate de bacterios oral es discutite.

Es proponite un possibile mechanismo de infection focal, sed il existe nulle methodo scientific pro demonstrar su validitate.

Focos oral de infection es discutite in relation con morbos articular, febre rheumatic, morbo valvulo-cardiac, morbo renal, morbo ocular, e dermatosis.

Medical Views on Oral Problems

HERPES ZOSTER*

TO THE EDITOR:—*Dr. Erward Shupala* (W Virginia Med J 56:191,1960)*advocates the use of 1.3 cc. of neuramide (Protamide) daily for 4 successive days in the treatment of herpes zoster. Is this treatment generally accepted? What are the contraindications, if any?*

W. O. Bailey, M.D., Washington, D.C.

ANSWER.—Neuramide is one of the many drugs which have been recommended for treatment of herpes zoster. Since no agent is known which effectively counteracts the causative virus, nothing need be said about its special value as a therapeutic agent. Herpes zoster is a spontaneously resolving process, and no therapy has yet been discovered which improves on nature's method.

ALBERT M. KLIGMAN, M.D.

* Questions and Answers, J.A.M.A., March 18, 1961, p. 1036.

PTYALISM IN PREGNANCY*

TO THE EDITOR:—*A 31-year-old woman is now about 3-months pregnant. Her previous pregnancy in 1957 ended at the fifth month in an abortion. She has had normal blood pressure and urinalyses and blood findings, and a protein-bound iodine level of 3.8 mcg. per 100 ml. Her menstrual periods were widely spaced in her early twenties at 25 to 45 days and normal in amount and duration, but after the abortion in 1957 these periods began coming at 28-day intervals. Her chief complaint is an excessive flow of salvia, so profuse that she has to carry a bath towel around with her at all times. She did not have this with her first pregnancy. She is apparently healthy in every other way. I am giving small doses of thyroid extract, and have tried a belladonna preparation (Donnatal), and a dehydrating agent (Cyclex), none of which seem to alleviate her symptoms. What further treatment is recommended?*

Charles B. Upshaw, M.D., Atlanta, Ga.

ANSWER.—Ptyalism is fortunately a rare complication of pregnancy. No completely effective cure has been reported. In addition to belladonna derivatives, 32 mg. of phenobarbital 4 times a day, or 5 mg. of prochlorperazine (Compazine) 4 times a day may give some relief. For further information, see *Medical, Surgical and Gynecological Complications of Pregnancy* (Guttmacher, A. F., Baltimore: Williams and Wilkins Company, 1960, p. 164).

Oxyphenonium bromide (Antrenyl) was reported to be effective by Bernstine and Friedman (*Obstet Gynec* 10:184, 1957). In their series of 24 patients, the average dose of this drug was 5 mg. 4 times a day, but was as high as 20 mg. 4 times daily in one patient. The only side effect noted was oral dryness. They obtained complete relief in 7 of the patients, partial relief or complete relief with side effects in 16, and a poor result in 1.

An emotional component may be present, and psychotherapy has been suggested by Cooper (*J Obstet Gynaec Brit Emp* 64:582, 1956).

GEORGE M. RYAN JR., M.D.

* Questions and Answers, J.A.M.A., March 18, 1961, p. 1037.

DENTAL SURGERY DURING ANTICOAGULANT THERAPY*

TO THE EDITOR:—*The article by Behrman and Wright in The Journal, Feb. 11, 1961, p. 483, pleased me and supported the conclusions of my study, that dental surgery can be performed safely while patients are on anticoagulant therapy. Without this timely evidence, the adverse reports from Boston in 1957 might have continued to deter physicians from permitting such treatment. Since the first report, many more patients have undergone dental surgery while under antithrombotic drug treatment. With observance of ordinary precaution and proper selection of patients, the physician and the dentist will have little trouble.*

The four steps advocated by Behrman and Wright during dental surgery and the follow-up precautions are excellent. It is to be hoped that this report will receive wide distribution among dentists, so that there need be less insistence on the part of the referring physician that the dental surgery is a safe procedure within the limits of ordinary calculated risks.

John M. Askey, M.D., Los Angeles.

* Letters to the Editor, J.A.M.A., May 27, 1961, p. 746.

CURE FOR SMOKING HABIT*

There is an excellent chance to stop smoking for everybody seriously willing to do so, according to Professor Börje Ejrup of Sweden. In the last few years, 88% of the patients treated according to his method have stopped smoking, and another 11% have been able to reduce their consumption of tobacco by 75% or more. So far about 4,000 patients have been treated at Prof. Ejrup's clinic in Stockholm, and about 200 physicians throughout Sweden have adopt-

ed the method in their practices. Among the latest innovations is a tablet, Tobalin, with a slight tobacco flavor which, though harmless, gives the patient a certain satisfaction.

* Foreign Mail, J.A.M.A., April 8, 1961, p. 71.

AMPHETAMINE AND HALITOSIS*

TO THE EDITOR:—*Do amphetamine and related drugs cause halitosis, and if so, why?*

M.D., New York.

ANSWER.—A review of several standard reference books on pharmacology and one on the amphetamines did not reveal any evidence that these drugs cause halitosis. In addition, consultation with some experts on the use of amphetamines indicated they were unaware of this reputed action of these drugs. If halitosis is noted with the use of amphetamine, it may be due to dryness of the mouth caused by the drug, or it may be due to an effect of the drug on the gastrointestinal tract. This latter action of amphetamine is slight and variable. Large doses, however, have been reported to cause, in some patients, nausea, eructations, relaxation of intestinal tonus, and flatulence.

JOHN R. LEWIS, PH.D.

* Questions and Answers, J.A.M.A., April 8, 1961, p. 79.

UNDIAGNOSED DIABETES*

TO THE EDITOR:—*If a person has diabetes and is unaware that he has it, is there danger in his losing weight by treating himself with a commercially prepared 900-calorie formula diet?*

M.D., Texas.

ANSWER.—In a middle-aged or elderly person who is overweight and whose unrecognized diabetes is of the type not easily prone to ketosis, the loss of weight would have only a beneficial effect. In fact, the diabetic condition of a large percentage of persons with onset of diabetes above the age of 45 or 50 years can be controlled solely by restriction of carbohydrates and total calories, with reduction of weight to a level which is desirable for age and height. In the person with diabetes characterized by an easy tendency to ketoacidosis, usually a person with the onset of diabetes occurring before he reaches 30 years of age, the loss of weight might hasten the development of ketosis by increasing the catabolism of endogenous fat. This would be particularly true if, in the person concerned, the diabetes, although unrecognized, were actually symptomatic. In such a person, it would be imperative to combine dietary regulation with the administration of appropriate amounts of insulin.

ALEXANDER MARBLE, M.D.

* Questions and Answers, J.A.M.A., March 25, 1961, p. 1115.

BIOFLAVONOIDS*

TO THE EDITOR:—*Are bioflavonoids with or without vitamin C effective in the prevention of colds?*

Edme Regnier, M.D., Salem, Mass.

ANSWER.—Although favorable results have been reported with the use of bioflavonoids, alone or combined with vitamin C, for the treatment and prevention of the common cold, careful studies by Franz and associates (*JAMA*, 162:1224, 1956) and Tebrock and associates (*JAMA*, 162:1227, 1956) fail to confirm these findings. The conclusion expressed in a joint report by the Council on Drugs and the Council on Foods and Nutrition (*JAMA*, 164:1675, 1957) would seem still to be valid: "On the basis of the best evidence now at hand, it would appear that flavonoids have no significant effect, palliative or otherwise, on the course of the common cold."

CHRISTIAN WINGARD, M.D.

* Questions and Answers, J.A.M.A., May 13, 1961, p. 563.

LIPSTICK AND CANCER*

QUESTION:—*I am concerned about the possible presence of carcinogens in lipsticks. A 32-year-old woman has had a scar on her lip since childhood. Could lipstick irritate this scar and cause cancer?*

M.D., California.

ANSWER:—The Food and Drug Administration has indicated that many of the dyes presently used in lipstick formulations may contain traces of a cancer-inciting agent. This opinion is based on animal-feeding tests, and, admittedly, the amount of dye that might be ingested into the human system from lipstick is much less than the amounts used in the animal-feeding tests. We have no information on the effects of local applications.

Some manufacturers market not only a line of hypoallergenic lipsticks but also make available "special formula" lipsticks which contain no dyes. Insoluble pigments are used to achieve the desired colors. We suggest that the latter type of lipsticks be used by your patient.

JOSEPH B. JEROME, PH.D.

* Questions and Answers, J.A.M.A., May 20, 1961, p. 646.

SALTY BITTER TASTE*

QUESTION:—*A 55-year-old patient has a salty and bitter taste in his mouth each morning on awakening. He sleeps with his mouth open. Ear, nose, and throat examination is unrevealing. Proper dental care has been obtained. This bothersome subjective complaint has been present for over 40 years. Is there any treatment for this?*

Lester E. Wold, M.D., Fargo, N.D.

ANSWER:—Salty tastes are usually ionic in origin and come particularly from such salts as sodium chloride, ammonium chloride, calcium chloride, sodium iodide and sodium bicarbonate. Bitter tastes are usually due to undissociated molecules, principally alkaloids, such as nicotine and quinine, but ferric, iodine, silver, and magnesium salts are also bitter.

The history indicates that these tastes have been present since the patient was about age 15. As there has been an adequate check of the nose, throat, and teeth, we are forced to conclude that this long-standing problem could be due to such long-established habits as smoking (nicotine residual) or sleeping with the mouth open (which might, because of drying, lead to ionic concentration). I could only suggest that he stop smoking and learn to sleep with his mouth closed.

ROBERT A. SCHNEIDER, M.D.

* Questions and Answers, J.A.M.A., May 27, 1961, p. 750.

PRENATAL EXPOSURE TO FLUORINE*

QUESTION: *What is the effect on her unborn child of the use of fluorine or fluoride by a pregnant woman?*

William J. Morse, M.D., Attleboro, Mass.

ANSWER: Although the placenta allows the passage of fluorine to the fetus, it seems, within limits, to protect the unborn child against adverse effects of fluorine. Thus, mottling of the enamel (endemic fluorosis), which is the first sign of excessive fluoride intake, does not occur in the deciduous teeth which are undergoing formation prenatally, whereas the permanent teeth, which are calcified almost entirely after birth, do show mottling in a large percentage of children when the water supply contains more than 2 ppm of fluorine.

While the fluoride levels in cord blood seem to parallel those of the mother, it has not been clearly established that prenatal fluoride reduces dental caries. The doubts in this area continue because of the absence of definite clinical evidence, and the lack of certainty as to exactly when fluoride in the drinking water exerts its greatest protective effect against dental caries. Accumulating evidence indicates that the greatest protection is probably given in the last stages of tooth calcification or at the time of tooth eruption, and to a lesser degree thereafter.

On the basis of available clinical evidence, and for reasons just cited, it cannot be claimed that prenatal administration of fluoride in the form of pills will confer caries-resistance on the teeth of the baby. A more rational form of fluoride therapy, when there is no fluoride in the drinking water, is to begin fluoride administration just prior to tooth eruption. To get full and continuing benefits the fluoride should be used either in solution or in the form of a lozenge to be sucked so that it will react with the outside surface of the enamel where, by reducing surface solubility, it will supplement any effects conferred during tooth formation.

B. G. BIBBY, D.M.D.

* Questions and Answers, J.A.M.A., June 3, 1961, p. 831.

Book Reviews

Anatomy and Physiology of Speech, by Harold M. Kaplan, McGraw-Hill Book Co., New York, 1960.

This is an excellent book for students and teachers who are interested in phonetics and speech production. It is broad in scope and thorough, yet concise and clear. It presents the subject from the standpoint of several biologic disciplines which are masterfully integrated. Throughout the entire book the author, an outstanding authority in physiology and biology, is ever mindful of correlating and, whenever possible, integrating structure and function of all the organs that participate in sound and speech production. This is precisely the kind of approach that should be welcomed by the medical and dental professions, speech correctionists and all those that are interested in the oro-naso-laryngo-pharyngeal structures in health and disease. This book is also of particular interest to those who are engaged directly or indirectly in cleft palate rehabilitation.

The contents are excellently organized and interestingly presented. It is a very readable book, comprehensive in its treatment. Much light is shed on many areas in speech production mechanisms not well understood previously.

Professor Kaplan has given us a most valuable addition to the literature on health services.

JOSEPH S. LANDA

Introduction to Orthodontics, Anders Lundstrom, O. Odont. D., Editor, Blakiston Division, McGraw-Hill Book Co., New York, 315 pages, 246 illustrations, 1961, $15.00.

Nine renound Scandinavian specialists have collaborated in writing this most important contribution to the understanding of the relationship of orthodontics to overall dental care. The authors feel that while all forms of restorative dentistry are important, this work emphasizes the work of the natural dental and facial structures throughout the patient's life rather than just limiting treatment to adult dental prosthesis.

The three chapters on treatment of mal-occlusion discuss tissue reactions, different methods of treatment, and the treatment of various forms of malocclusion. These are designed to give the student and practitioner an understanding of the possibilities in orthodontic therapy in general as well as special information about interceptive methods and their indications. Of particular importance is the last chapter which presents information on the desirability of immediate deferred treatment.

Included in this text are chapters on facial embryology and development, swallowing and speech, and malocclusion, with reference to their importance in the understanding of orthodontic problems. This work also covers the role of genetics and nongenetic factors as well as environmental influences and their importance in the total problem.

Diagnostic Stomatology, by E. Cheraskin, M.D., D.M.D., The Blakiston Division, McGraw-Hill Book Co., Inc. New York, 338 pages, 121 illustrations. 1961, $12.50.

Dr. Cheraskin has written an outstanding book in which he analyzes the clinical pathological reflections of oral diseases. This well illustrated text includes numerous concise case histories with clear cut photographs and charts of clinical symptoms. The essential factors are highlighted at the end of each chapter by excellent brief summaries. Also found at the close of each chapter are selected references by the author.

The author has analyzed the clinical pathological reflections of oral diseases in this book. He has presented a new approach in the field because the book is organized on the basis of a clinician's approach to a diagnostic problem and is based on the author's highly successful teaching experience.

This book has particular appeal for the dental and medical practitioners who desire information on the important relationship of oral disease to the total diagnostic picture. It is also excellent for the clinical pathologists who are interested in the relationship of laboratory studies to oral lesions. Practitioners and specialists in dentistry will find a chapter on philosophical discussions of normal values and their meaning especially interesting. Experience in medical and dental practice indicates the fact that a pathologic process is the result of more than one causative agent. There is increased emphasis on the scientific understanding of the mouth as a mirror of systemic diseases and the author demonstrated the infinite degrees of disease as they present themselves to the practitioner.

Survey of Dentistry, by Byron Hollinshead, Director, American Council of Education, Washington, D. C., 603 pages, 1961, $10.00.

The Survey of Dentistry in the United States was begun by the American Council on Education in 1958, under the direction of a commission appointed by the Council. The membership of the commission reflected not only representative views of the dental profession itself but also the diversion interests of the public at large.

The recommendations which the survey presents in this volume were formulated from analyses of

many commission and committee discussions and from the evidence contained in masses of data obtained from answers to a variety of questionnaires covering specialized aspects of dentistry. Because of the diversity of the membership of the commission and of the committees which gave evidence in each field of study the recommendations which are based on the needs of the public indicate also a deep understanding of the problems of the profession.

The present volume reports status and findings in the following fields.

1. *Dental Health:* the incidence of dental disease; failure to seek treatment; backlog of need for care; dental public health programs including fluoridation; methods of financing dental care; availability of service.
2. *Practice:* treatment of dental disease; teaching of prevention; methods and conditions of practice; use of auxiliary personnel; determination of fees.
3. *Education:* need of dentists to take increased responsibility for total oral health; curriculum, including needs to relate technical skills more closely to scientific knowledge and to the other fields of learning; selection and admissions procedures; cost of education; state licensure; education after graduation.
4. *Research:* subjects showing promise of contributing to the treatment and prevention of dental disease; availability of research personnel; funds for research; communication of findings.

Introduction to Dental Anatomy, by James Henderson Scott, D.Sc., M.D., L.D.S., and Norman Barrington Bray Symons, M.Sc., B.D.S., Third Edition, E. and S. Livingstone Limited, Edinburgh and London, 388 pages, 1961, $9.00. (Williams and Wilkins Co., Baltimore 2, Md.)

The authors believe that a textbook on this subject should not only give information on the structure and development of the dental tissues, but should also attempt to correlate the tissues which make up the tooth with the functions in which the teeth, the oral cavity and all its parts are concerned in the activities of the body.

This text has been carefully revised and the order of presentation slightly rearranged. The main additions have been made in chapters one and seventeen. The new material has been added with the intention of emphasizing the functional unity of the masticatory apparatus. Although tooth morphology has been treated in somewhat greater detail, the authors have attemped to give more than the essential facts as they believe that the student should get to know the inner details of tooth form by the constant study of the teeth themselves.

About twenty new illustrations have been added and a rather greater number of the existing figures have been replaced or modified.

Essentials of Medicine for Dental Students, by A. C. Kennedy, M.D., M.R.C.P.E., F.R.F.P.S., E. and S. Livingstone Limited, Edinburgh and London, 272 pages, 1960, $5.00. (Williams and Wilkins Co., Baltimore 2, Md.)

This book is based on a series of lectures given to dental students of Glasgow University preparing for the final examinations. The author has presented a simplified account of the various medical disorders while omitting many of the details which are required by the physician for the actual practice of medicine. The descriptions of many of the diseases of necessity is incomplete, but the author has tried to avoid statements which are incorrect. Disorders such as facial pain and hemophilia, of which the dentist should have a fuller knowledge, are dealt with at greater length.

The majority of the chapters and sections open with a brief description of the relevant anatomy and physiology. Line drawings and tables are included throughout the text and in the appendix are shown illustrative roentgenograms and clinical photographs.

Academy Proceedings

PUBLICATIONS COMMITTEE

Since the last mid-annual report, the Editor and Publications Committee have published a 68 page January 1961 issue and a 52 page April issue. Both of these journals were well received by the dental profession. More than average space was allotted in both of these issues to the annual meeting which will take place this year aboard a cruise ship.

After eight years as Editor of the Journal of Dental Medicine I find it necessary to retire. The pressures of a busy practice, the responsibilities of teaching commitments, and other activities in which I am engaged have necessitated this decision. I feel that I am leaving the Journal in good hands and I am sure that my successor will be able to carry on in the same tradition that we have established during the last eight years. I wish to assure the Board of Trustees of my complete cooperation in transferring the reins of Editorship to my successor. At the present time I am preparing the July 1961 issue of the Journal so that its publication will be mailed on time. The new Editor will take over the reins after having been elected at the cruise convention and I feel that it would be quite impossible for him to edit the July 1961 Journal on such short notice. I will also assist my successor in publishing the October 1961 issue if he so desires.

I have enjoyed the last eight years as Editor of the Journal of Dental Medicine and feel that the Academy has contributed a great deal to dental journalism by its publication of our Journal.

I wish to thank the officers, past presidents, committee chairmen and rank and file members of the Academy for the cooperation they have given me during my term of office. To my successor I extend my best wishes for the continuation of a successful Journal of Dental Medicine.

IRVING YUDKOFF, *Editor and Chairman,* Publications Committee

GRADUATE AWARDS FOR 1961

In January 1961, letters were sent to the Deans of 694 Medical and Dental Schools throughout the world requesting each school to select the senior student who had shown the greatest interest and proficiency in the field of Oral Medicine. That student was to receive from the American Academy of Dental Medicine a Certificate of Merit and a five-year subscription to the Journal of Dental Medicine. The Academy also sends the Journal to each school library as a gift. We have received 140 replies to this date and more acceptances will come in throughout the year because of the different commencement dates.

This project has had a tremendous acceptance by these schools. The general feeling is that the Academy is offering a distinct service to Dentistry within a Specialized Field and that besides honoring the individual award recipients, the school is also being

honored. Very many letters from both students and Deans of Colleges tell of their appreciation for having received the Journal and the Certificate. Our Academy is held in very high esteem and we are considered leaders in the field of Oral Medicine.

I feel that the scope of these awards could be broadened considerably if the Academy would act as a sounding board for problems in Oral Medicine. I believe that many of the award recipients as well as medical and dental schools have problems and questions within this field. We could be of great assistance to them by answering their questions either as a feature of our Journal or on an individual basis.

EARL STONE, *Chairman*

COMMITTEE ON INTERNATIONAL INTERCHANCE OF DENTAL MEDICINE

Martin Entine is now teaching Crown and Bridge Prosthesis to crowded enthusiastic classes at San Marcos University in Lima, Peru. He will be followed by Leonard Rosenthal in June on Oral Medicine and George Stewart in August on Endodontics.

Final arrangements are underway to welcome Dr. Jorge Diaz Cuadros, Chairman of the Oral Diagnosis Department at San Marcos who will study at Temple with Leonard Rosenthal from September to June.

Dean Scheutz and former Dean Taimon are bringing groups from Peru to visit United States dental schools in the next few weeks.

Application blanks for Fulbright grants have been sent by Herman Becks, Don Lyons, Samuel Turkenkopf and Barry Miller to give courses at the National University at Bogata Columbia in 1962. Negotiations are underway for similar courses in 1962 at the Central University at Caracas, Venezuela.

The enthusiastic response of Latin American universities and the limited number of our members who are willing to serve pose a problem even for those universities where English can be used. Shall we sponsor men who are not members of the Academy to supply the needs of these countries? If we cannot keep the program going, some other organization will.

Your chairman has avoided any inquiries at dental schools in Latin America where a word would bring an eager request for courses simply because we lack the manpower. However, we must go all out now or see the program ended as far as the Academy is concerned.

S. LEONARD ROSENTHAL, *Chairman*

MASSACHUSETTS SECTION

The first meeting was held on Sunday, October 23, 1960, at the VA Hospital, So. Huntington Avenue, Boston. President Richard Harriot opened the meeting at 10:15 A.M. and adjourned it at 4.55 P.M. The speaker at the morning session, Dr. Stephen Mallett, former Chief of the Dental Service at the Boston City Hospital, discussed "Common Errors" and concluded with a demonstration of O.R. technique from scrub to P.O. instructions. The afternoon session was conducted by Dr. Donald Mohler, Chief of Anesthesiology at the VA Hospital and Assistant Professor at Tufts University Medical School and whose subject was "Anesthesias, Pre-Medication, and 'Caine' Reactions."

The second meeting was held at the Harvard Club of Boston on Saturday, March 25, at 5 P.M., coinciding with the annual visitation of the President of the American

Academy of Dental Medicine, Dr. Hermann Becks, whose subject was "The Hormonal Control of Skeletal Growth, Tooth Eruption and Development."

The third meeting was held at the Statler-Hilton Hotel, Monday, May 1, at 6 P.M. It was the annual meeting. The guest speaker was Dr. Samuel Turesky, Associate Research Professor at Tufts University School of Dental Medicine, and his subject was "Some Observations on Calculus Formation."

EDWARD LOFTUS, *Delegate*

MISSOURI SECTION

Our Section has grown by leaps and bounds both in membership and statue. (For it is the youngest of the Sections.)

This year, as in previous years, all of our meetings were highlighted with guest speakers who spoke on the following subjects and their relationship to dentistry:

September:	Louis Tureen, M.D. "The Neurologist and Dentist"
November:	George G. Stewart, D.D.S. "Focal Infection"
January:	Sidney Goldring, M.D. "Neuro-surgery and Oral Medicine"
March:	Hermann Becks, D.D.S. "Hormonal Control of Skeletal Growth, Tooth Eruption and Development"
April:	Alex Sonnenwirth, M.D. "Bacteriology of Special Interest to the Dentist"

At our last meeting the following officers were elected:

President	Gunter Schmidt
Secretary	Sherman J. LeMaster
Treasurer	Jim Bynum
Membership Chairman	Frank Gruchella
Delegate	Gunter Schmidt

SHERMAN J. LEMASTER, *Secretary*

MONTREAL SECTION

The first Scientific Meeting of the Montreal Section was held on September 12, 1960 at the Mount Stephen Club. The guest lecturer was Dr. Claude Bertrand, Chief Neuro Surgeon, Notre Dame Hospital, Montreal, and President Canadian Neurological Society, who spoke on "The Intriguing Principles of Facial Pain."

At a meeting held on November 28, 1960 at the Cercle Universitaire, Dr. R. M. Wiener, one of our own members, discussed "Minor Oral Lesions."

At our third meeting held on March 21, 1961, at the Queen Elizabeth Hotel, we were honored by a visit of the National President, Dr. Hermann Becks. Following the

rendition of a most interesting illustrated lecture on "Hormonal Control of Skeletal Growth, Tooth Development and Eruption", Dr. Becks brought us up to date on the "State of the Academy".

The Annual Meeting and closing one for the season was held on April 19, 1961, at the Cercle Universitaire. Following dinner with our ladies, a business session was held which ended with the election of officers for 1961-62.

President	Dr. H. M. Robichaud
Vice-President	Dr. R. F. Harvey
Secretary	Dr. H. Caplan
Executive	Dr. G. Plamondon
	Dr. A. D. Richardson
	Dr. R. M. Wiener
Delegate	Dr. L. J. Rosen

LOUIS J. ROSEN, *Delegate*

NEW JERSEY SECTION

The New Jersey Section has had an active and interesting year under the presidency of Samuel Ament.

The Executive Committee met at frequent intervals, at which time plans were formulated and put into action to stimulate interest and cooperation.

As a result the section meetings were well attended. Clinicians presented their subjects and with questions from the floor enlivening the sessions, all felt that the evenings were well spent. Subject matter ranged from Psychology to Endocrines to Considerations in Mouth Rehabilitation, thus presenting diversification in fields associated with Dental Medicine.

The Membership Committee approved and the section voted favorably on five new members.

Officers elected to manage the affairs of the section are:

President	James Dickinson
President Elect	Ralph Kanders
Secretary-Treasurer	Alvin Hirschberg
Editor	Abraham Riskin
Delegate	Reuben Feltman
Trustees	Jack Eskow
	Walter Soltanoff
	Edward Bressman

The section is proud of the accomplishments and the fellowship awarded our Samuel Turkenkopf by the National and wish him continued successes.

At our meeting held March 29th, our living past presidents were presented with laminated certificates attesting to their service to the Academy and expressing the appreciation of the membership.

REUBEN FELTMAN, *Delegate*

NEW YORK SECTION

The New York Section is completing a most active and exciting year. This year it is host at both National Meetings, the Mid-Winter Meeting in December and the Cruise Convention from May 26—June 3, aboard the S.S. Ocean Monarch.

The programs of our local chapter meetings have also been most stimulating.

At our November meeting, Dr. Frank Celenza discussed "Current Developments of Gnathological Philosophy."

The December National Meeting was capably planned and conducted under the chairmanship of Dr. Stephen Nachbar.

Dr. Hermann Becks, our National President, was our honored speaker at the Samuel Charles Miller Memorial Lecture on March 30th. Dr. Becks gave a most interesting and stimulating lecture on "Hormonal Control of Skeletal Growth and Tooth Development."

At this meeting, the following slate of officers was presented and elected for the coming year:

President	Angelo Cacciatore	Assistant Editor	Rudolph Palermo
President Elect	Seymour M. Koteen	Delegate	Howard L. Ward
Secretary	Leonard Nevins	Trustees	Celia Dickman
Treasurer	Arthur Nachbar		Frederick Romberg
Editor	Alan Simonson		Stanley Miller

Dr. Becks also introduced our new members and presented membership certificates to them.

The New York Section looks forward to being host to our National Body at the Cruise Convention. A fine scientific program has been planned, plus the usual social get-to-gethers.

HOWARD L. WARD, *Delegate*

MICHIGAN SECTION

The activities of the Michigan Section of the A.A.D.M. of the past year revolve around four meetings:

The meeting of September 27, 1960 was held at the Wayne County Medical Society Building. About 60% of the members were present for cocktails and dinner after which a business meeting was held. The speaker for the evening was Dr. Raymond Monto of the Hematology Section of Henry Ford Hospital, who gave an excellent discourse on the latest advances in the field of blood disturbances through the use of oral testing procedures. The Women's Auxiliary of the Michigan Section held their meeting in conjunction with the men.

The next meeting, held November 22, 1960 at the Statler-Hilton Hotel, was a luncheon meeting during the Annual Detroit District Dental Society meeting. The regular business meeting was dispensed with in order to avail our guest essayist, Dr. Abram Chasens, of the Farleigh-Dickinson Dental College, to present his excellent paper, illustrated with slides on the "Clinical Manifestations and Treatment of Diseases of the Oral Soft Tissues."

On January 25, 1961, the next meeting of the Michigan Section was held as a full day meeting at the Wayne County Medical Society Building. Twenty-five members and

fifteen guests were present. After a business meeting, election of officers was held. In the afternoon and evening sessions, Dr. J. Lewis Blass of the New York University Dental School, presented a paper on "Motivating the Patient toward Accepting your Treatment, your Fee Schedule and your Lifetime Plan."

The Spring meeting was held March 16, 1961, at the Statler-Hilton Hotel. Dr. Hermann Berks, our National President, was present for an executive meeting in the morning. The afternoon and evening sessions were addressed by Dr. Becks, who presented an interesting lecture and slides on "The Hormonal Control and the Skeletal Growth in Tooth Development." Twenty-one members and three guests were present. An evening business meeting was held.

RUSSEL L. SMALLWOOD, *Secretary*

AMERICAN ACADEMY OF DENTAL MEDICINE
NEW MEMBERS ELECTED AT BUSINESS MEETING, MAY 27, 1961

Blaine, Edward E.
Memphis, Tennessee

Fenech, Louis J.
Windsor, Ont., Canada

Ferreira, Sebastiao
Rio de Janeiro, Brazil

Goldberg, I. Lawrence
Avenel, N. J.

Graham, Richard M.
Traverse City, Mich.

Hoffman, Edward
Baltimore, Maryland

Kniaz, Avrom
Milwaukee, Wisconsin

Lantz, Harold J. E.
Wynnewood, Pa.

Law, Albert D.
Detroit, Michigan

Lobene, Ralph R.
Boston, Massachusetts

Marcus, Richard William
Plainfield, N. J.

Masters, Donald Haynes
San Antonio, Texas

Melamed, Myron A.
Binghamton, N. Y.

Melser, Alvin W.
Red Bank, N. J.

Mendel, Bert L.
Montreal, Que., Canada

Osleeb, Stuart S.
New York, N. Y.

Ostaski, William Matthew
Lynn, Mass.

Staub, Daniel
Belle Harbor, N. Y.

Tanner, Richard Howard
Boston, Mass.

Vella, Ross J.
Syracuse, N. Y.

Wrubel, George J.
Staten Island, N. Y.

Announcements

POSTGRADUATE TRAINING IN PERIODONTIA AND ORAL MEDICINE NEW YORK UNIVERSITY COLLEGE OF DENTISTRY

The following postgraduate courses in Periodontia and Oral Medicine will be offered at the New York University College of Dentistry and will be given by Dr. Sidney Sorrin and associates:

No. 123.02. PERIODONTIA AND ORAL MEDICINE IN THE SPANISH LANGUAGE

Four weeks, Monday through Friday, 9:00 A.M. to 4:00 P.M.
March 12 to April 13, 1962 inclusive. Tuition including books and instruments approximately $385.00.

Theoretical and practical application of Periodontia and Oral Medicine is fully explained and demonstrated. Equilibration of occlusion is performed by the student on casts. Lectures and clinical demonstrations of diagnosis and treatment planning, conservative and radical techniques, equilibration of occlusion, home care, etc. The entire course is conducted in the Spanish language.

COMPREHENSIVE PREPARATION IN PERIODONTIA AND ORAL MEDICINE

No. 120.11 and 121.11. Two academic years, full time, September 18, 1961 to May 24, 1963.
Tuition $2,420.00 (two years). Instruments and books approximately $200.00.

No. 120.21 & 121.21 Four academic years, half time. September 18, 1961, to May 1965. (Two and one half days weekly.)
Tuition $2,420.00 (four years). Instruments and books approximately $200.00.

These courses are designed for comprehensive preparation in Periodontia and Oral Medicine and are of particular significance for certification towards specialization. All didactic and clinical phases are covered with the objective of developing expert proficiency.

No. 222. GRADUATE COURSE IN PERIODONTIA AND ORAL MEDICINE

Two academic years, full or half time, beginning Sept. 18, 1961. Tuition $2,420.00. (two years). Instruments and books approximately $275.00.

This program leads to the degree of Master of Science (in Dentistry). The objectives are to teach superior proficiency in Periodontia and Oral Medicine based on adequate background in the basic sciences.

For further information, write to the Secretary, Postgraduate Studies, New York University College of Dentistry, 421 First Ave., New York, N. Y.

THE NEW YORK INSTITUTE OF CLINICAL ORAL PATHOLOGY, INC.

The New York Institute of Clinical Oral Pathology announces the Tenth Herman L. Reiss Memorial Lecture to be held at the New York Academy of Medicine Building, 2 East 103rd Street, on Monday, October 30, 1961, at 8:30 P.M.

The essayist will be Joseph L. Bernier, D.D.S., M.S., F.D.S., R.C.S. (Eng), Major General, United States Army, Assistant Surgeon General and Chief of the Army Dental Corps; Professor and Chairman Department of Oral Pathology, Georgetown University, who will lecture on the subject of "Correlation of the Roentgenologic and Histologic Features of Certain Tumors of the Jaw."

This will be an open meeting to which members of the dental, medical and allied professions are cordially invited.

THEODOR BLUM, *Secretary*

THE AMERICAN BOARD OF ORAL PATHOLOGY
Certification Examination

The next examination of the American Board of Oral Pathology will be given on December 9 and 10, 1961. Candidates will be notified of the place upon being accepted for the examination. All applications must be completed by August 1, 1961, for the December examination. Information and application blanks may be obtained from the secretary, Dr. William G. Shafer, Indiana University School of Dentistry, 1121 West Michigan Street, Indianapolis 2, Indiana.

ALBERT EINSTEIN COLLEGE OF MEDICINE OF YESHIVA UNIVERSITY POSTGRADUATE DENTAL PROGRAM

The Albert Einstein College of Medicine, Department of Dentistry will sponsor a five day participation course in Clinical Periodontics, Monday to Friday, October 30, 31, November 1, 2, 3, 1961. This course will embrace the theoretical and practical application of the causative factors, diagnosis, prognosis and surgical management of periodontal disease. Clinical and television demonstrations will include occlusal adjustment, and simplified surgical procedures. Emphasis will be placed on the integration of periodontia into the general dental practice. Lecture sessions, clinical demonstrations, and clinical sessions will be held at the Albert Einstein College of Medicine.

Each participant will have an opportunity to perform curettage, temporary splinting, and a simplified surgical procedure. This course is basically designed for out-of-town practitioners. Tuition $175.00. Course under the direction of Dr. Irving Yudkoff and Dr. Marvin N. Okun. Enrollment limited.

For further information and an application blank, please write Director, Postgraduate Dental Program, Albert Einstein College of Medicine, Eastchester Road, Morris Park Avenue, Bronx 61, N. Y.

THE AMERICAN ACADEMY OF IMPLANT DENTURES
Third Annual International Seminar On Implants in Dentistry

Place: The University of Pennsylvania, School of Dentistry Philadelphia, Pennsylvania

Time: Friday, Saturday, Sunday, October 13, 14, 15, 1961 (Just prior to the A.D.A. Convention)

Subject: A complete didactic and clinical review of the entire field of implant dentures to date. Eminent lecturers on implant subjects will review case selection, techniques, contraindications, trouble-shooting and follow-up. Actual patients will be present who have functioned with implant dentures for ten years and more. Prominent University of Pennsylvania faculty members will enlarge the program by lecturing on such subjects as oral roentgenology, oral surgery, prosthodontics and general medical considerations, as related to implantodontology.

There will be one day devoted to a complete demonstration of the two stage operation involved in constructing and inserting an implant on actual patients. The University's closed-circuit television facilities will be utilized for this purpose.

All members of the dental profession are welcome. Fee: Fifty Dollars. Enrollment is limited to forty doctors. For application forms, further information and details, write: Dr. A. Norman Cranin, Chmn., A.A.I.D., 2120 Ocean Avenue, Brooklyn 29, New York.

37TH ANNUAL GREATER NEW YORK DENTAL MEETING TO BE HELD DECEMBER 4-8

The 37th annual Greater New York Dental Meeting, world's largest seminar of postgraduate dental education, will be held at Hotel Statler Hilton, New York City, December 4 to 8, it has been announced by Dr. David Tanchester, General Chairman.

Attended each year by dentists and allied practitioners from all parts of the world, the meeting is sponsored by the First and Second District Dental Societies of the State of New York, metropolitan components of the American Dental Association.

This year's session, Dr. Tanchester reported, will offer some new innovations, as well as many features that have proved most popular in the past.

The program will include joint analyses of recent research developments by leading investigators from dental schools and hospitals covering pertinent facets of dentistry. The "Luncheon and Learning" session, at which dental leaders seated at heads of tables seating ten persons moderate informal discussions of their specialties will be continued. In addition, the registered clinics, visual education films, clinical demonstrations and other educational features that have always distinguished the meeting will be included.

The scientific research exhibits will present findings by research groups of hospitals, colleges and the armed services. The commercial exhibit section will display the latest in dental materials and equipment.

A new teaching medium by which the registrant can perform a technique step-by-step with the clinician has been arranged, and an all-day seminar on time and motion studies in the dental office will be introduced.

In brief, Dr. Tanchester said, the 1961 session will present the latest current procedures in all major phases of dentistry, as well as studies of new techniques significant to future dental practice. The printed program will carry expanded synopses so that registrants may have in advance a clear grasp of subject matter.

For programs and reservations, please write Mrs. Mabel Purdy, Executive Secretary, Room 106A, Hotel Statler Hilton, New York 1, N. Y.

AMERICAN BOARD OF HYPNOSIS IN DENTISTRY

The American Board of Hypnosis in Dentistry will meet October 5th, 1961, at the Sheraton-Cleveland Hotel, Cleveland, Ohio. Applicants for certification who wish to appear for examination at this time should communicate with the Secretary, Dr. S. Irwin Shaw, 18201 Cherrylawn Avenue, Detroit 21, Michigan, prior to September 1st, 1961.

BERNARD GOTTLIEB PRIZE SPONSORED BY THE NORTHEASTERN SOCIETY OF PERIODONTISTS

Purpose:

The prize will be awarded in the opinion of the judges to the most outstanding, original investigation submitted. Investigation will deal with the field of Periodontics in its broadest aspects.

Prize:

The prize will consist of a $250.00 cash award and a certificate.

Award:

The prize will be awarded annually. The judges, however, may decide not to award the prize at any time that a suitable investigation is not available. The award will be made at the annual spring meeting.

Contestants:

The contest is open to all investigators in the biologic and health sciences.

Papers must be submitted in triplicate to the Secretary, Northeastern Society of Periodontists, prior to January 1 of the year of award. A title sheet with the authors name is to be submitted separately and will be kept by the secretary. The papers should be in a form suitable for publication and not in the form of a masters thesis.

Award Procedure:

The secretary will forward the manuscripts without author identification to the judges.

The judges will by majority decision select the prize paper and so notify the secretary by March 1 of the respective year. The secretary will then inform the winning contestant. The paper will be read at the annual spring meeting and the prize awarded at that time.

Composition of Board of Judges:

The president, with the approval of the Board of Director, will annually appoint three judges. They will be drawn from:

1. Chairman—a member of the Northeastern Society of Periodontists.
2. An outstanding Periodontist at large.
3. A dentist holding a basic degree and engaged in dental research. Members of the Board of Judges shall serve for a minimum of one and a maximum of three years.

The names of the judges shall be kept confidential by the Board of Directors.

Publication:

The winning paper shall be submitted to the Journal of Periodontology or other suitable journals for publication. It shall carry an annotation

"This investigation has been awarded the Bernard Gottlieb Prize for meritorious research in Periodontics Sponsored by the Northeastern Society of Periodontists and the proper date."

Publicity:

Announcements of the contest shall be published in major dental publications at least 6 months prior to the spring meeting.

Irwin W. Scopp, D.D.S.
Secretary, Northeastern Society of Periodontists
Veterans Administration Hospital
New York 10, New York

THE AMERICAN ACADEMY OF ORAL PATHOLOGY

At the Fifteenth Annual Meeting of the American Academy of Oral Pathology, held April 6-8 at Ann Arbor, Michigan, the following officers were elected for the year 1961-1962: President—David F. Mitchell, President-Elect—Norman H. Rickles, Vice President—George Greene, Editor—Donald A. Kerr, Council—Joseph L. Bernier, Barnet M. Levy, Hamilton B. G. Robinson, William G. Shafer, Harold R. Stanley, Richard W. Tiecke.

Robert J. Gorlin was elected to Secretary-Treasurer for a three-year period. George Greene and Richard Tiecke were elected as Examiners to the American Board of Oral Pathology.

The 1962 meeting will be in Indianapolis, the 1963 in Miami and the 1964 one at the National Institute of Health, Bethesda.

TUFTS UNIVERSITY SCHOOL OF DENTAL MEDICINE

DPG 605 — A Special Participation Course in Periodontology
Monday through Friday for one week from October 9, 1961, through October 13, 1961.
Tuition $175.00—Class Limited
Doctor Irving Glickman and Staff

For information write: Director of Division of Graduate and Postgraduate Studies, Tufts University School of Dental Medicine, 136 Harrison Avenue, Boston 11, Mass.

THE AMERICAN ACADEMY OF PERIODONTOLOGY

The American Academy of Periodontology will hold its forty-seventh annual meeting on board the M. S. Bergensfjord, sailing from Philadelphia on October 20th to Bermuda, and returning to Philadelphia on October 25th.

Holding the meeting on board this ship for five days with ample time allowed for relaxation and the enjoyment of Bermuda's attractions, enables the American Academy of Periodontology to present a com-

prehensive program relating to new advances in all phases in Periodontal research and treatment. In Bermuda the ship will serve as the Academy's hotel.

The program scheduled appears to be one which will provide a maximum mental refreshment for both members of the Academy and members of the American Dental Association participating in this meeting.

Any member of the American Dental Association or recognized affiliate organizations may secure space on the M. S. Bergensfjord as long as space is available.

The motor vessel Bergensfjord is a very new and modern vessel providing all of the facilities of a present day trans-atlantic liner.

For those interested in participating in this meeting, contact should be made with the Caribbean Cruise lines, Suite #301 Roeper Building, Miami 32, Florida—Att: Mr. E. M. Baskette.

Howard A. Hartman, D.D.S.
Chairman of Publicity

TEMPLE UNIVERSITY SCHOOL OF DENTISTRY

Clinical Endodontics Seminar

A one-day course in Clinical Endodontics will be presented on Friday, October 20, 1961 immediately following the annual meeting of the American Dental Association. The course is under the direction of Dr. Leonard Parris.

This course will cover the principles of Clinical Endodontics, and will be presented utilizing visual aids, including closed circuit television. Luncheon will be included. The fee for this course is thirty-five dollars ($35.00).

Clinical Endodontics

An intensive participation course in Clinical Endodontics will be presented November 6 to 11, 1961. The course is under the direction of Dr. Leonard Parris.

Closed circuit television will be used for the clinical demonstrations. The postgraduate student will utilize diagnostic procedures, initiate treatment, and carry through to completion endodontic therapy on clinic patients supplied by the University. Single and multi-rooted teeth will be treated. Enrollment is limited to ten.

This course will fulfill the prerequisite requirements for the postgraduate course, "Surgical Endodontics" to be presented April 1962.

For further information and application on the above two courses, write to: Dr. Louis Herman, Director of Postgraduate Studies, Temple University School of Dentistry, 3223 North Broad Street, Philadelphia 40, Pennsylvania.

DR. PERCY T. PHILLIPS NAMED EXECUTIVE SECRETARY OF DENTAL SOCIETY OF THE STATE OF NEW YORK

Dr. Percy T. Phillips, New York City, past president of the American Dental Association, was appointed executive secretary of the Dental Society of the State of New York at its 93rd annual meeting held at Syracuse, May 15-17.

The growth of the Society and its continuously increasing activities have for some years pointed to the need of an executive secretary who would devote his full time to the affairs of the Society and the welfare of the dental profession in the State of New York. To this post Dr. Phillips has been designated as the first incumbent, for a term of five years.

Dr. Phillips' distinguished career was crowned in 1958 by his election to the presidency of the American Dental Association. He served with distinction during the Centennial in 1959.

From the time of his graduation in 1919 from the College of Dental and Oral Surgery (Columbia University) he has been a dedicated servant to the dental profession and his services have been honored by professional bodies not only in his home state but throughout the nation and the world at large.

Dr. Phillips is retiring from private general practice in order to devote his entire time to the service of the Society.

THE AMERICAN INSTITUTE OF ORAL BIOLOGY

The 18th Annual Meeting of The American Institute of Oral Biology will be held in Palm Springs, California, November 6-10, 1961, at the beautiful Hotel Riviera. The faculty will comprise the following outstanding scientists:

W. Ross Adey, M.D., Professor of Anatomy and Physiology at the University of California at Los Angeles is a neurophysiologist of international reputation. He is recognized for his work on the rhinencephalon, a part of the brain with important influence on the processes of emotion, learning, and memory.

M. Michael Cohen, D.M.D., Professor of Pediatrics in the School of Dental Medicine and Medicine, Tufts University, will present his work concerning developmental disorders of the dentition, oral aspects of mongolism, periodontal problems and the affects of endocrinopathies in childhood as they pertain to dental development.

Russell D. Coleman, D.D.S., has done important work in the experimental production of oro-facial anomalies in the animals, which may ultimately shed light on the etiology of these conditions, and will present the results of his work to date. He is the Assistant Professor of Anatomy at the School of Dentistry, University of California, San Francisco.

Thomas K. Cureton, Ph.D., was exceptionally popular two years ago with his work on physical fitness and is returning by unanimous request. He will conduct special physical fitness testing clinics in addition to his formal presentations regarding the improvement of psychological states by means of physical exercise-fitness programs, the physiology of training and conditioning muscles, tendons, ligaments, and joints, and the nature of cardiovascular fitness and its conditioning and protection by exercise-fitness programs. He is the Director of the Physical Fitness Laboratories, University of Illinois, Urbana.

Francis L. Lederer, M.D., Professor of Otolaryngology and head of the department at the University of Illinois, Chicago, is internationally known and has written several books in his field. His discussions will include the relationship of prognosis to early diagnosis of oro-facial syndromes; the significance of speech deviations in oro-facial diagnosis; early recognition of serious pathology in oro-facial diseases; inflammation, trauma, and tumors causative of oro-facial deformities; and misadventures in search for skill in oro-facial diagnosis and treatment.

William Lefkowitz, D.D.S., is very well known to the dental and medical professions and his presentations will deal with tissue culture, the development of human enamel in vitro, and the transplantation of cultured and uncultured tooth buds. He is the Director of Graduate Studies at the University of Kansas City.

Jens J. Pindborg, D.D.S., Dr. Odont., a scientist of world-wide reputation in his field, is the Professor of Oral Pathology at the Royal Dental College, Copenhagen, Denmark. Because of the great interest devoted to oral manifestations of skin disease he will discuss the pathologic conditions occurring in the periodontal tissues. He will also present the ethnic and environmental aspects of oral cancer, and will give his classic among lectures of its kind "The Dentist in Art."

For further information and application forms, please write the Executive Secretary, Marion Lewis Meyer, 2240 Channing Way, Berkeley 4, California.

NEW YORK UNIVERSITY COLLEGE OF DENTISTRY

The annual two-day refresher course in endodontics, given by the New York University College of Dentistry, will take place this year on Friday and Saturday, December 1 and 2, immediately preceding the Greater New York Dental Meeting.

Dr. Morris B. Auerbach, chairman of the department of endodontia, and his associates will demonstrate new developments and review current techniques in the treatment of diseases of the pulp. By means of lectures, seminars, and demonstrations on patients they will show how to restore vital and non-vital teeth to a healthy, functioning condition.

Further information can be obtained by writing to: Postgraduate Division, New York University College of Dentistry, 421 First Avenue, New York 10, New York.

FIRST DISTRICT POSTGRADUATE EDUCATION PROGRAM, NEW YORK

Preparation of Teeth for Jackets for Abutment Purposes ..... Dr. I. Franklin Miller
October 5, 6, 7, 1961

Newer Concepts in Restorative Dentistry
Dr. Alexander Leff
October 18, 19, 1961

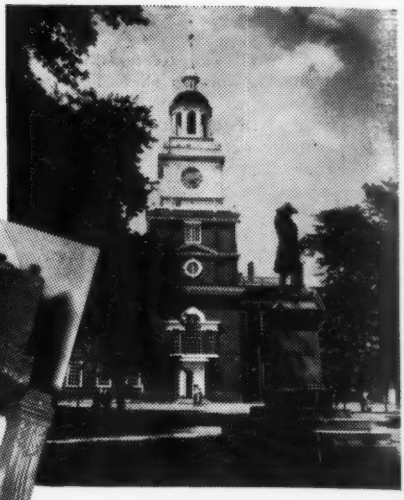
Occlusal Adjustment—Integration into the Practice of Dentistry ..... Dr. Julius N. Obin
October 18, 1961

Oral Dynamics ..... Dr. John T. McSweeney
October 19, 20, 21, 1961

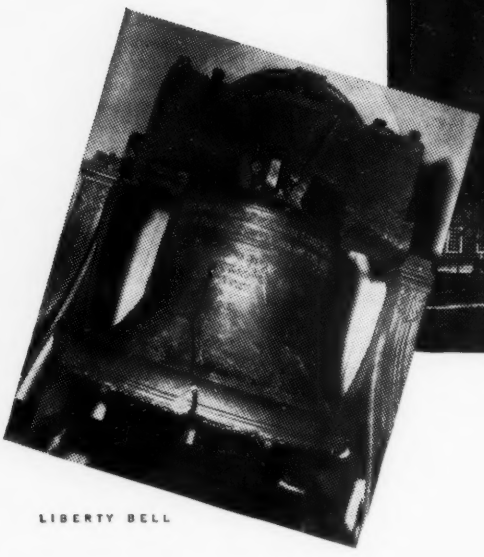
Horizontal Pinsplinting of Anterior Teeth
Dr. A. J. Feldman
Dr. Carl Sanell
October 27, 28, 1961

All courses will be held from 10:00 A.M. to 4:30 P.M., unless otherwise noted, at the Statler Hilton, Seventh Avenue at West 33rd Street, New York City 1.

For further information and application blank, please write to the Postgraduate Education Program, First District Dental Society, Statler Hilon, New York City 1.



INDEPENDENCE HALL



LIBERTY BELL

Philadelphia

102nd Annual Session
American Dental Association
October 16-19, 1961

Make your reservation
now using the
housing form in the
Journal of the A.D.A.

BETSY ROSS HOME